

The County Executive appointed the following individuals to the Senior Citizen Fire Safety Task Force:

**PUBLIC MEMBERS**

Bruno, Hal  
Chevy Chase, MD 20815

Rabinow, Jacqueline VICE CHAIR  
Silver Spring, MD 20906

Livingston, John C., Jr.  
Davidsonville, MD 21035

Shnider, Irving  
Silver Spring, MD 20906

Notley, David P.  
Bethesda, MD 20814

Siegel, Alan  
Bethesda, MD 20817

Poole, Gloria  
Rockville, MD 20853

Thomas, J. Paul CHAIR  
Silver Spring, MD 20904

Prichard, Audrey M.  
Dickerson, MD 20842

Thompson, Barbara Ricks  
Wheaton, MD 20902

**EX OFFICIO MEMBERS**

Fire and Rescue Service  
Delaney, William  
Rockville, MD 20850

Public Health Services – Licensure  
and Regulatory Services  
Cohen, Susan  
Rockville, MD 20850

Kelleher, Matthew  
Rockville, MD 20850

Offices of the County Executive  
Reilly, Scott, Assistant CAO  
Rockville, MD 20850

Commission on People with Disabilities  
Hamlin, Lise  
Rockville, MD 20850

Commission on Aging  
Goldbloom, Irwin  
Chevy Chase, MD 20815

Department of Health and Human Services

Aging and Disability Services  
Campbell-Kotler, Margaret  
Rockville, MD 20850

Leahigh, Suzy  
Silver Spring, MD 20902

## ORGANIZATIONAL MEMBERS

Management of Major Senior  
Housing

Albright, Walter N.  
Asbury Methodist Village  
Gaithersburg, MD 20877

Curtin, James A. MD  
Leisure World of Maryland  
Silver Spring, MD 20906

Jones, Greg  
Erickson Retirement Communities  
Oakcrest Village  
Silver Spring, MD 20904

Housing Opportunities Commission

Zanger, Bernadette  
Bethesda, MD 20814

GEICO Insurance

Grenier, Kevin  
Washington, DC 20076

Department of Liquor Control

Durbin, Katherine M.  
Rockville, MD 20855

The Burn Center at  
Washington Hospital Center

Hollowed, Kathleen A. RN  
Washington, DC 20010

Apartment and Office Building  
Association (AOBA)

Hoover, Lesa N. Esq.  
Annapolis, MD 21401

## STAFF LIAISON

Best, John M., Deputy Fire/Rescue Chief (Ret.)

Fire and Rescue Service

101 Monroe Street

Rockville, MD 20850

Ross, Jacqueline D., Office Services Coordinator

Fire and Rescue Service

101 Monroe Street

Rockville, MD 20850

## ***Table of Contents***

Listing of Task Force members	i
Table of Figures	v
Executive Summary	1
The Problem: Senior Citizen Fire Fatalities	14
Senior Citizen Population Growth	14
Senior Citizens Living Alone	16
Where Senior Citizens Reside	
18    Decline in the Number of Caregivers	
19    Economic Factors Affecting Seniors	
20    Senior Citizen Risk Factors	
22    Sensory Impairments	
24    Senior Citizen Income	
25    Alcohol and Prescription Drugs	
25    Misuse of Smoking Materials	
26    Summary of Senior Citizen Fire Safety Challenges	
26	
Organization and Mission of the Senior Citizen Fire Safety Task Force	27
Purpose	27
Composition	27
Administrative Support	28
Public Members	29
Ex-Officio Members	29
Organizational Members	30
Staff Liaison	30
Planning, Strategy and Methodology	31
Task Force Objectives	
31    Action Steps	
31    Methodology	
32    Result Oriented Strategy	
32    Standardized Reporting	
32    Topic Focused Sub-Group Assignments	
33	
Task Force Study and Resources	36
Benchmarking	36

Study and Analysis	37
Expert Presentations	41
Incident Presentations	42
Literature and resource identification	43
Task Group and Task Force Recommendations	44
Rationale for Prioritization of Recommendations	44
Public and Service Provider Education Recommendations	44
Introduction	44
Implementation Prioritization	44
Rationale	45
Community Characteristics and Demographics Recommendations	46
Introduction	46
Implementation Prioritization	46
Rationale	47
Building Technology and Standards Recommendations	47
Introduction	47
Implementation Prioritization	48
Rationale	50
Recommendations Requiring Advocacy and Legislation	51
Introduction	51
Implementation Prioritization	51
Rationale	52
Projected Future Directions	53
Conclusion	55
Bibliography and Information Sources	56
Appendix A – Fire Sprinkler Data	57
Appendix B – Senior Housing and Care Facilities Definitions	63
Appendix C – Benchmarking Comparison Charts	64

### ***Table of Figures***

- Figure 1 Actual/Projected Population Growth 1980-2030 All Ages
- Figure 2 Actual/Projected Population Growth 1980-2030 Age 65+
- Figure 3 Percentage of Age Groups Living Alone 1994-1997-2003
- Figure 4 Seniors Living Alone Per Square Mile
- Figure 5 Household Population by Age/Gender 2000 & 2010
- Figure 6 Household Population by Age/Gender 2000 & 2030
- Figure 7 Senior Citizens Type of Residence
- Figure 8 Projected Change in Senior Population by Planning Area 2000-2010
- Figure 9 Ratio of Working Age Adults Per Senior 1995-2050
- Figure 10 Percentage of Seniors Living Below the Poverty Line
- Figure 11 Percentages of Ethnic Groups Living Below the Poverty Line
- Figure 12 Senior Citizens with Self Reported Disability
- Figure 13 Senior Citizen Fire Fatality Data Comparison by Benchmark Jurisdiction

## ***Executive Summary***

Montgomery County is experiencing an epidemic of senior citizen fire deaths. During the past four years, fourteen of the fifteen Montgomery County fire fatalities were senior citizens over the age of 65. Twenty six senior citizens, age 65 or over have succumbed to fire incidents in the past ten years. In the years 2005-06 alone, the County experienced 9 fire fatalities all of which were senior citizens living independently.

All of the fires involving seniors occurred at home. Montgomery County has a wide variety of housing types – single family, duplexes, garden apartments, townhouses, hi-rise apartment buildings of 7 floors or more, as well as low-rise apartment buildings of 6 floors or fewer. Seniors are found residing in each of these types of housing with most living in single family homes. More than one-third of the County's high-rise residents are senior citizens.

21 percent of all Montgomery County homes are occupied by senior citizens. 78 percent of seniors between the ages of 75 and 84 live alone.

Seniors over the age of 65 experience a fire death rate nearly twice the national average; the rate for seniors over 75 jumps to three times the average.

### **Organization and Mission of the Senior Citizen Fire Safety Task Force**

Recognizing the alarming trend of senior citizen fire related deaths and injuries across Montgomery County, County Executive and Fire Chief Thomas Carr, Jr. determined that the best approach to identify effective fire safety strategies and procedures was to convene a focused, geographically representative task force. A formal committee was established composed of citizens with diverse backgrounds, several with fire suppression experience, together with individuals representing senior citizen interests and organizations to study the recent tragic incidents and recommend preventative actions.

Effective March 24, 2006, the Senior Citizen Fire Safety Task Force was established as an Executive committee. The Task Force is composed of 26 members appointed by the Executive. A majority of the public members are senior citizens and were appointed for a two year term. The Task Force will complete its work in May of 2008.

The Executive appointed the following ex-officio members from the designated public agencies:

- Two members from the Montgomery County Fire and Rescue Service,
- Two members from the Department of Health and Human Services,
- Two members from the County's Commission on Aging,
- One member from the Housing Opportunities Commission staff or residents,

- One member from the County's Commission of People with Disabilities,
- One member from the Department of Liquor Control,
- One member from the Offices of the County Executive.

The remaining 16 members include representatives of the following:

- The Burn Center at Washington Hospital Center
- Apartment Owners and Builders Association (AOBA)
- Management of major senior housing complexes in the County
- Senior citizen organizations
- Residents of the County

The Executive designated J. Paul Thomas of Fairland as Chairman and Jacqueline Rabinow of Leisure World as Co-chair of the Task Force.

Administrative support to the Task Force is provided by the Department of Fire and Rescue Services.

#### Planning, Strategy and Methodology

The Senior Citizen Fire Safety Task Force, supported by the Task Force leadership and staff liaison, immediately initiated plans to accomplish the charge of Executive Order #103-06. As a first step, the fire safety interests and expertise of the individual members were identified during the early regular meetings. The first few meetings were dedicated to fatal fire incidents involving senior citizens in order to develop a shared understanding of the issues involved, and the unique characteristics of each event.

The process of establishing a working agenda and methodology required the identification of and selection from various approaches in Task Force consensus building. This was done by the presentation of several methods of achieving effective and successful group process outcomes. The task was made more difficult due to the wide array of objectives described in the Task Force mission. It was agreed that the mission objectives would require the partitioning of the Task Force into focused topic oriented sub groups as follows:

1. Building Technology and Standards
2. Community Characteristics and Demographics
3. Public and Provider Education
4. Advocacy and Legislation

### Task Force Objectives

Based on this organizational approach, the task force objectives were established as follows:

- Identify strategies to reduce fire risk among senior citizens
- Identify strategies to reduce fire casualties and fatalities among senior citizens
- Identify changes to building and fire codes and standards for new and existing structures that anticipate/acknowledge the aging population and appropriate changes to incorporate safety features
- Explore the addition of new use “independent living” group within the national building and fire model codes and standards
- Identify new and emerging off-the-shelf technologies that bridge the gap between code-compliant new buildings and non-compliant existing buildings
- Identify demographic changes and community changes that effect the safety of senior citizens
- Identify personal and community based procedures and requirements that senior citizens and caregivers can adopt and practice to increase senior citizen fire safety

### Action Steps

A major focus of the Task Force is the preparation of interim and subsequent reports. To facilitate the focused topic group outcomes and to develop a strategy for achieving standardized reporting requirements, the following action steps were discussed and agreed upon:

- Agree on group leaders
- Delimit the select topics
- Identify information sources, references, and experts
- Develop topic outlines
- Determine assignments based on expertise/interest
- Collect data, write topic sections, and review materials
- Assemble topic narratives and references
- Present for full Task Force review and comment
- Edit and modify draft



Accordingly, the following methodology was adopted to drive the group process:

- Assign members to topic groups based on interest/expertise
- Convene topic groups for technical issue study/writing
- Identify technical and best practices information sources
- Develop working topic outlines
- Report progress and issues routinely to full Task Force
- Receive Task Force input for topic draft revision
- Complete re-writing and editing for publication

### Task Force Progress

Task force members were provided background information and statistics which explain the County's senior citizen fire casualty and fatality phenomenon. Several meetings were devoted to educating members to this experience and achieving a baseline understanding of fire behavior and other related knowledge required to develop technical recommendations and provide supporting rationale for policy maker consideration.

Dr. Charles Smith of the Department of Health and Human Services, Aging and Disability Services provided a comprehensive presentation educating the task force about the characteristics and demographics of Montgomery County seniors.

Reports and scenarios of fire incidents involving senior citizens in the County were presented as they occurred with pertinent and applicable educational audio/visual aids. Task Force members requested data resources of staff members routinely during the sub group deliberations.

The Senior Citizen Fire Safety Task Force conducted 22 meetings from July 7, 2006 to May 18, 2007. These meetings were held on the following dates:

July 7	October 20	March 23
July 21	November 17	April 13
August 4	December 8	April 20
August 18	January 12	April 27
September 8	January 26	May 11
September 22	February 9	May 18
October 6	February 23	
October 13	March 9	

### Expert Presentations

Senior Citizen Fire Safety Task Force members represented a cross section of Montgomery County geographically and by expertise. In order to bring all of the members to a common level of knowledge in the senior citizen fire fatality challenge, members requested that certain experts make presentations to the full Task Force.

- 07/07/06 William Delaney, Public Educator, MCFRS  
“Fire Death Statistics in Montgomery County”
- 07/21/06 William Delaney, Public Educator, MCFRS  
“Fire Behavior”
- 08/18/06 Dr. Charles Smith, Research Analyst, DHHS, Aging and Disability  
“Current and Future Demographics Overview of Montgomery County Seniors”
- 11/17/06 Deputy Chief (ret.) John M. Best, Master Firefighter Matthew Kelleher  
“History, Operation, and Performance of Fire Sprinkler Systems”
- 12/08/06 Sybil Greenhut, MSN, Senior Mental Health Programs, Behavioral Health and  
Crisis Services, DHHS  
“Co-occurring Disorders in Older Adults”
- Bonnie Klem, MSN, Adult Protective Services; Aging and Disability Services,  
DHHS  
“Hoarding Behavior in Older Adults”
- 01/12/07 Fire Marshal Ivan Humberson, City of Gaithersburg, MD  
“Retro-Residential Fire Sprinkler Legislation”
- 01/12/07 Master Firefighter Matthew Kelleher, MCFRS  
“Monterey Condominium Retro-Fire Sprinkler Installation”
- 01/26/07 Shannon Boyle, Public Relations Coordinator, GEICO  
“GEICO Public Relations/Communications Plan”
- 02/09/07 Professor Kathleen Hoke Dachille and Jill Athencio, Center for Tobacco  
Regulation, University of Maryland  
“Fire Safe Cigarettes; An Effective Tool for Reducing Cigarette Caused Fires”
- 04/13/07 Peter Piringer, Public Information Officer, MCFRS  
“Media Strategy Planning”

### Fire Incident Presentations

Six senior citizen fire fatalities occurred during the first year of the Task Force term. MCFRS provided detailed, informative presentations to the Task Force outlining the facts surrounding each of the fires including the date of the incident, gender, age, location, type of structure, and apparent fire cause and origin as follows:

11/24/06 Female, age 83

	Chevy Chase Multi-family high rise Living room Discarded smoking materials
08/27/06	Female, age 78 Kensington Single family dwelling Discarded smoking materials
01/19/07	Female, age 80 Silver Spring Multi-family high rise Kitchen Cooking
03/15/07	Female, age 74 Silver Spring Multi-family Bedroom Undetermined/suspected accidental
05/07/07	Male, age 88 Kensington Single family dwelling Kitchen egress Suspected refrigerator malfunction
05/07/07	Female, age 84 Kensington Single family dwelling Kitchen Suspected refrigerator malfunction

#### Rationale for Prioritization of Recommendations

The Task Force members felt strongly that in order to facilitate management and implementation of their 30 approved recommendations a ranking method is in order. Therefore, the following method was unanimously agreed upon to suggest priority rankings for implementation: (1) immediate, (2) short term, and (3) long term.

## Public and Service Provider Education Recommendations

### ***Immediate Implementation:***

1. **Establish a senior citizen fire safety staff position** for leadership in fire safety training, oversight of Task Force recommendation implementation and education.
2. **Form a coalition of industry partners** to assist the MCFRS to achieve its fire safety awareness communication goals including a network of relevant public agencies and private sector organizations.
3. **Develop a fire prevention publicity campaign** with Task Force guidance to include press releases, public service announcements, video news releases, a unique MCFRS frequently asked questions site, aging featured brochures for targeted distribution, and a speaker's bureau. Develop a specific marketing strategy for senior citizen fire safety to include community service volunteers drawn from public and private high schools.
4. **Utilize media events** of senior related fire incidents to educate citizens, care givers, family members and service professionals to special causes and hazards.

### ***Short Term Implementation***

5. **Initiate a public educational program** to encourage the installation of approved automatic fire sprinkler protection in all existing residential properties with special emphasis on seniors living independently throughout Montgomery County.
6. **Identify target audiences and user groups** residing in senior living communities, senior centers, and other residential facilities for priority attention via direct and media contact for fire prevention messages on smoking materials, kitchen and cooking behavior, heating/electrical equipment, and maintenance of approved alerting devices and systems.
7. **Initiate a senior life saving information program** including the utilization of MCFRS light duty personnel and training academy recruit classes to conduct a direct door-to-door offering of services to senior citizens such as free home visits on safety, evaluation of existing home smoke alarm equipment and installation when necessary, and promotion and installation of cooking safety equipment and hood based extinguishing systems.

### ***Long Term Implementation***

8. **Adopt senior literacy and safety training** to assist those seniors who may not have adequate skills in reading or comprehension to receive ethnically and culturally diverse safety training related to independent living options in later years.

9. **Suggest residential selection criteria** for use in public/caregiver programs to assist seniors and their families in selecting appropriate residential living options for seniors who are functionally impaired.
10. **Explore the feasibility of enabling persons with disabilities** to voluntarily register with the Montgomery County 911 system so that in the event of an emergency pertinent mobility impairment information is transmitted to first arriving emergency personnel.

#### Community Characteristics and Demographics Recommendations

##### ***Immediate Implementation:***

1. **Target seniors with hearing loss or other sensory impairments** to provide information and assistance with the installation of approved smoke alerting devices that address their sensory impairment such as visual, tactile, low and/or dual frequency and emerging technology.
2. **Increase collaboration between MCFRS and professional organizations** providing services for persons with sensory impairments to encourage their members to provide clients with information on the type of approved smoke detection devices most appropriate for their impairments.
3. **Request that county officials work with public utilities** to develop policies to enable utility companies to alert county public safety officials when utilities are to be shut-off in residences occupied by senior citizens.

##### ***Short Term Implementation:***

4. **Establish a partnership with the Alzheimers Association, National Capital Chapter** to develop fire prevention and safety education information for individuals with cognitive impairment, and their families.
5. **Establish partnerships with appropriate service organizations representing mobility impairments and disabilities** including, but not limited to, multiple sclerosis, arthritis, cerebral palsy, spina bifida, and eldercare programs such as AARP, to develop fire safety education information and training for individuals with limited mobility.
6. **Develop by DHHS and DLC new, innovative alcohol and substance abuse prevention, education, and treatment programs** designed for senior citizens.
7. **Develop a small grants program** to enable lower income communities and ethnic and culturally diverse communities within the county to design and implement fire safety awareness and prevention programs appropriate to their communities.

##### ***Long Term Implementation:***

8. **Increase funding for the MCFRS's budget** to reflect the increased demand for public education and other related services due to the rapidly expanding senior citizen population.
9. **Develop by MCFRS those policies and procedures** that will require home health agencies and providers of oxygen, assistive equipment and home care services to notify MCFRS for a home safety assessment to be conducted.

#### Building and Technology Recommendations

##### *Immediate Implementation*

1. **Require that the County develop a program to assist in the financing of the implementation of the requirement to install approved fire sprinkler systems** in existing residential facilities owned by not-for-profit housing providers and public agencies, and in residential facilities where more than 20 percent of the units are income restricted or have rents controlled under a public program.

##### *Short Term Implementation*

2. **Require that the owner(s) of all buildings more than seventy five (75) feet in height, serving as housing for senior citizens, housing institutional or educational occupancies,** or such other buildings as may be required by the authority having jurisdiction, **designate to the Fire Chief, a qualified individual responsible for life and fire safety for that building(s)** to insure compliance with applicable life and fire safety codes, standards and procedures.
3. **Require that any improvement to single family or duplex houses with modification costs exceeding 50 percent of the assessed structural value are required to install an approved fire sprinkler system** throughout the structure within three years of issuance of a building permit.
4. **Require that all new licensed, assisted living facilities, group homes** (As defined in Appendix B) **and residential living facilities install an approved fire sprinkler system.**

##### *Long Term Implementation*

5. **Require that all existing residential buildings with three or more living units,** regardless of ownership, **shall have an approved fire sprinkler system installed throughout** within five years of the effective date of the requiring legislation.
6. **Require that all licensed residential facilities will have a contract with a licensed installer to install an approved fire sprinkler system within one year of their license**

**renewal date**, after the passage of the requiring legislation, to be reviewed by the Fire Marshal. The authority having jurisdiction will take into consideration the scope, finances and size of the structure. The approved fire sprinkler system must be installed within three years of the signing of the contract unless the time is extended for extenuating circumstances as determined by the Fire Marshal.

7. **Require that all licensed residential facilities install new or upgrade existing detection/alarm systems and meet existing code requirements.**
8. **Require the installation of smoke barriers to form at least two smoke compartments on each level of new and existing residential properties** having 50 or more occupants on each level of the structure.
9. **Require that all new and existing panic/fire exit door hardware be easily distinguishable with reflective markings** installed at the lowest level of each exit door in all common areas of buildings.
10. **Require that exit stairways in new residential occupancies be constructed 72 inches wide** so that a wheelchair and a fully equipped firefighter or emergency worker may pass in either direction, and that exterior exit egress be able to accommodate mobility impaired occupants.
11. **Require that all residential occupancies housing non-ambulatory individuals** that are 75 feet in height from fire department access or higher, **have at least 50 percent of their elevator assemblies constructed in a rated, “hardened” positive pressurized manner** to provide safe egress in an emergency.

#### Recommendations Requiring Advocacy and Legislation

##### *Immediate Implementation*

1. **Require that the County develop a program to assist in financing the implementation of the requirement to install approved fire sprinkler systems in existing residential facilities** owned by not-for-profit housing providers, public agencies, and in residential facilities where more than 20 percent of the units are income restricted or have rents controlled under a public program.
2. **Request that county officials work with public utilities to develop policies to enable utility companies to alert county public safety officials when utilities are to be shut-off in the residence of a senior citizen.**

### ***Short Term Implementation***

3. **Increase funding for the MCFRS's budget to reflect the increased demand for fire and rescue services and urgent needs for public education and other related services** due to the rapidly expanding senior citizen population.
4. **Require that the owner(s) of all buildings more than seventy five (75) feet in height, serving as housing for senior citizens, housing institutional or educational occupancies,** or such other buildings as may be required by the authority having jurisdiction, **designate to the Fire Chief, a qualified individual responsible for life and fire safety for that building(s)** to ensure compliance with applicable life and fire safety codes, standards and procedures.
5. **Require that all new assisted living facilities, group homes and licensed residential facilities install an approved fire sprinkler system.**
6. **Explore the feasibility of enabling persons with disabilities to voluntarily register with the Montgomery County 911 system** so that in the event of an emergency pertinent mobility impairment information is transmitted to first arriving emergency personnel.

### ***Long Term Implementation***

7. **Require that all existing residential buildings with three or more living units,** regardless of ownership, **shall have an approved fire sprinkler system installed throughout** within five years of the effective date of the requiring legislation.
8. **Require that all licensed residential facilities will have a contract with a licensed installer to install an approved fire sprinkler system within one year of their license renewal date,** after the passage of the requiring legislation, to be reviewed by the Fire Marshal. The authority having jurisdiction will take into consideration the scope, finances and size of the structure. The approved fire sprinkler system must be installed within three years of the signing of the contract unless the time is extended for extenuating circumstances as determined by the Fire Marshal.
9. **Require that all licensed residential facilities install new or upgrade existing detection/alarm systems and meet existing code requirements.**
10. **Require the installation of smoke barriers to form at least two smoke compartments on each level of new and existing residential properties** having 50 or more occupants on each level of the structure.
11. **Require that all new and existing panic/fire exit door hardware be easily distinguishable with reflective markings** installed at the lowest level of each exit door in all common areas of buildings.



12. **Require that exit stairways in new residential occupancies be constructed 84 inches wide** so that a wheelchair and a fully equipped firefighter or emergency worker may pass in either direction and that exterior exit egress be able to accommodate mobility impaired occupants.

=

13. **Require that all residential occupancies housing non-ambulatory individuals that are 75 feet in height from fire department access or higher, have at least 50 percent of their elevator assemblies constructed in a rated, "hardened" positive pressured manner** to provide safe egress in an emergency.

#### Projected Future Direction

As prescribed by Executive Order 103-06, the Senior Citizen Fire Safety Task Force is expected to complete its initial work by May of 2008. An annual report is due in May of 2007 with the final report due at completion of the task force's two year term.

Expert technical presentations and topic focused task group work sessions are scheduled for the remainder of the two-year term. Priority will be given to refinement of methods for prevention of senior fire fatalities in single-family residences and those seniors "aging in place" who are living independently. The schedule includes topics related to senior citizen functional deficits such as dementia and mental health impairments, marketing and public attitude modification techniques, implications of the statewide "fire-safe" cigarette legislation, the effectiveness of detection and suppression systems from the senior citizen residential perspective and revisions to, and addition of applicable fire codes and standards. During the second year, the task groups with outside fiscal expertise will determine the resource allocations necessary for implementation of the complete recommendation set.

The Senior Citizen Fire Safety Task Force, through the sub group organization, will continue to pursue the task force mission and responsibilities for the term of the Executive Order to reduce and/or eliminate the hazards, behaviors and/or causes associated with senior citizen fire casualties and fatalities.

#### Conclusion

The task force will continue to study Montgomery County's senior citizen fire casualty and fatality phenomenon through the five topic sub group assignments. The result of these deliberations will be incorporated as formal technical recommendations in the final report in an effort to reduce senior citizen fire casualties and fatalities. The task force will continue to monitor senior citizen fire casualty and fatality trends for the remaining task force term and provide guidance and advice to the County Executive and the fire and rescue services chief officer as evidence indicates.



Chairman J. Paul Thomas calls a Senior Citizen Fire Safety Task Force meeting to order at the Up County Service Center



An organizational meeting of the Senior Citizen Fire Safety Task Force

### ***The Problem: Senior Citizen Fire Fatalities***

During the last four years, fourteen of the fifteen Montgomery County fire fatalities were senior citizens over the age of 65 with 24 senior citizens dying from fire in the past ten years (See Appendix C). The County experienced nine senior citizen fire fatalities during CY2005-06 with four senior citizen fire fatalities through May of CY2007.

The majority of fires involving seniors occur at home. Montgomery County has a wide variety of housing types – single family, duplexes, garden apartments, townhouses, hi-rise apartment buildings of seven floors or more, as well as low-rise apartment buildings of 6 floors or less. Seniors can be found residing in each of these types of housing with most living in single family homes. More than one-third of the County's high-rise residents are senior citizens.

Senior citizens reside in 21 percent of all Montgomery County homes with 78 percent between the ages of 75 and 84 living alone.

People over the age of 65 experience a fire death rate nearly twice the national average; over 75 it jumps to three times the average.

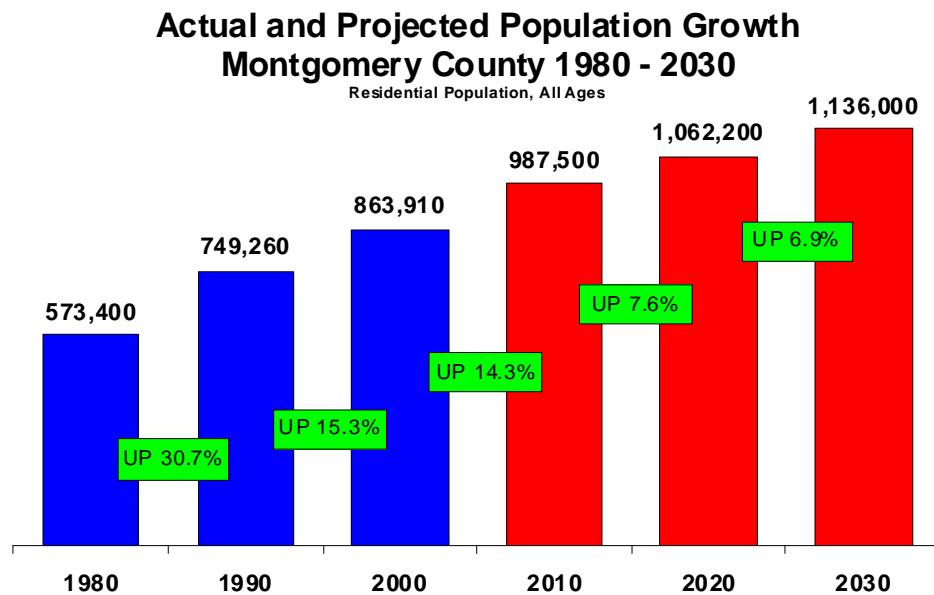
#### **Senior Citizen Population Growth**

The number of senior citizens in the United States is rapidly increasing. The U.S. population age 65 and over is expected to double in size within the next 25 years. Baby Boomers, those born between 1946 and 1964 begin to turn 65 in 2011. It is anticipated that the 13% of the population that are seniors will increase to 20% in 2030.

Montgomery County is no exception to this phenomenon. In the year 2000 there were 92,503 individuals in the county 65 years of age or older. By 2005, that number increased to over 100,000 and is projected to grow by another 12,000 by 2010. The county's senior population will continue to grow at an exceptionally high pace for years to come (See Figures 1 & 2).

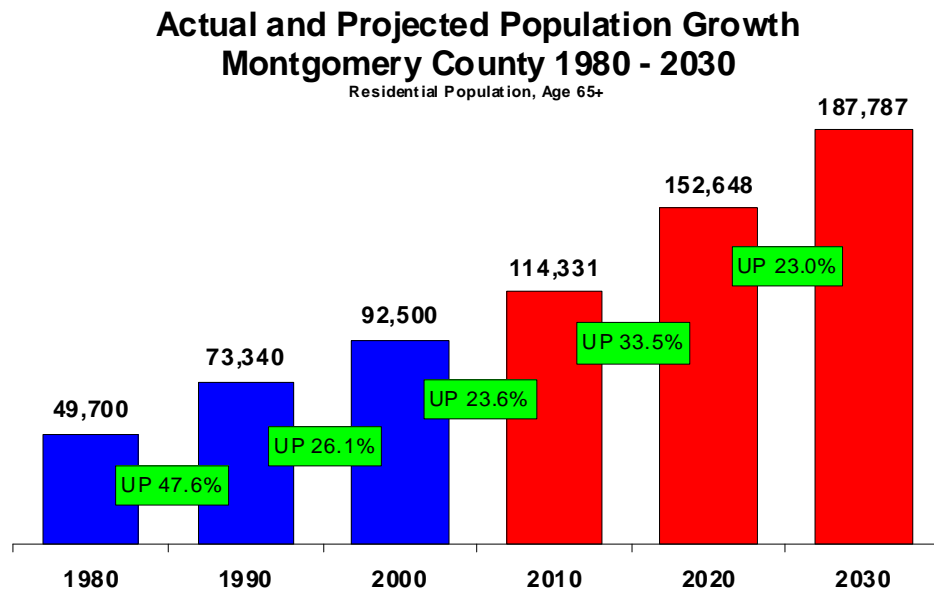
The senior population, over 65 years of age, is projected to increase 23% compared to the overall population growth of 6.9%. It is incumbent on policy makers to understand these changing demographics and significantly modify approaches to fire safety measures to meet these needs.

Figure 1: Actual/Projected Population Growth 1980-2030 All Ages



Source: U.S.Census 2000

Figure 2: Actual/Projected Population Growth 1980-2030 Age 65+



Source: U.S. Census 2000

### Senior Citizens Living Alone

As seniors age in Montgomery County they increase their likelihood of living alone. Overall, 25% of county seniors age 65 and older live alone, by the time one reaches 85 years of age 65% of seniors are living alone (See Figures 3 & 4). Older women are more likely to live alone than older men.

In 2000, there were 3,928 households headed by women age 65 and older, with no spouse present. Only 1,057 households headed by men age 65 and older had no spouse present (See Figures 5 & 6).

**Figure 3: Percentage of Age Groups Living Alone 1994-1997-2003**

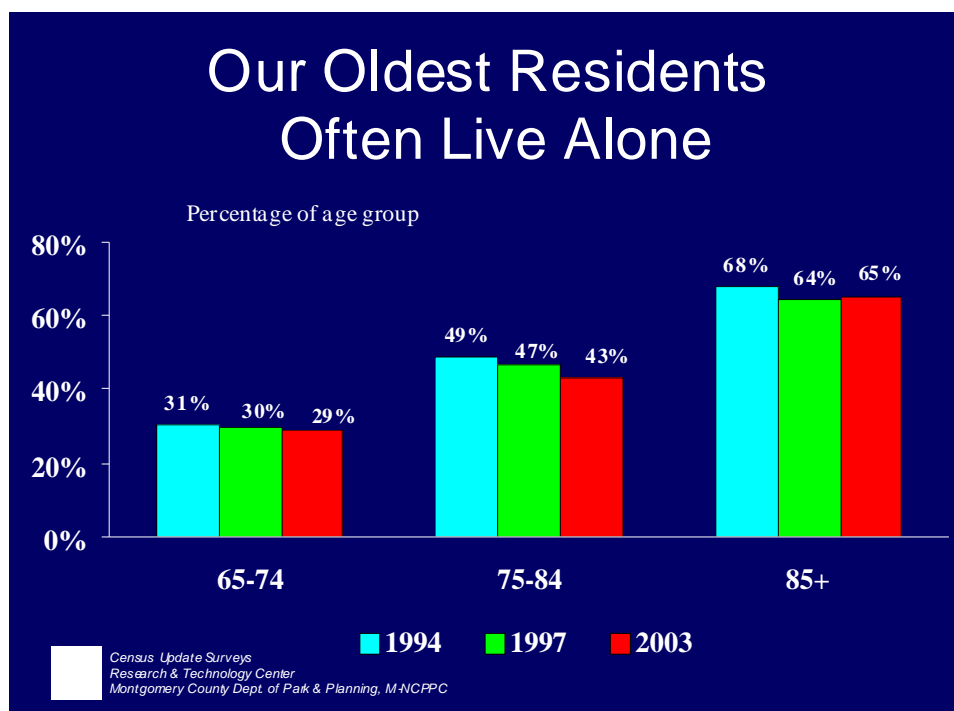
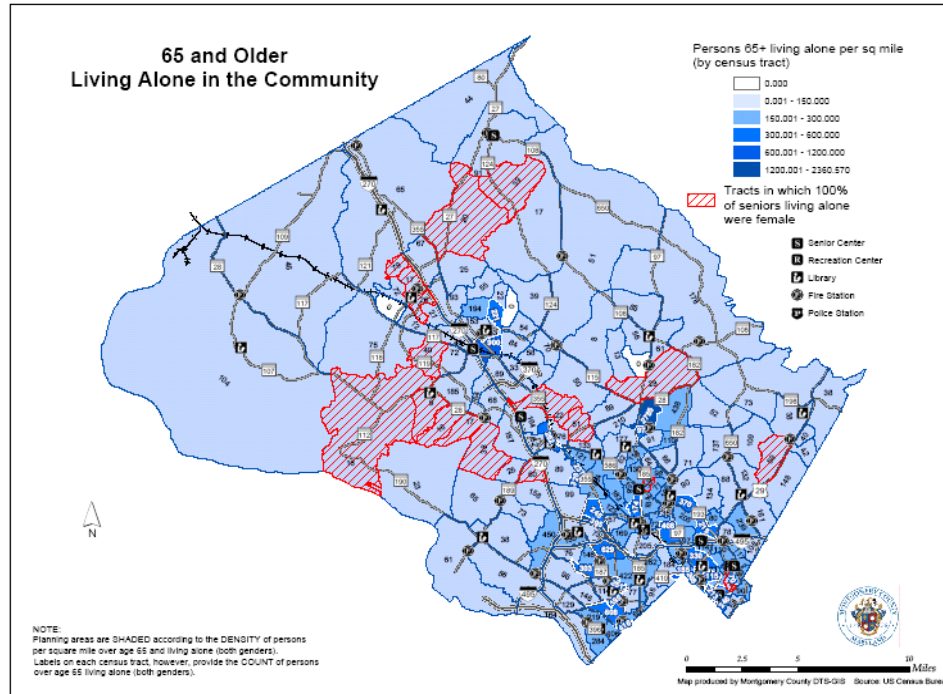


Figure 4: Seniors Living Alone Per Square Mile



Source: U.S. Census 2000

Figure 5: Household Population by Age/Gender 2000 & 2010

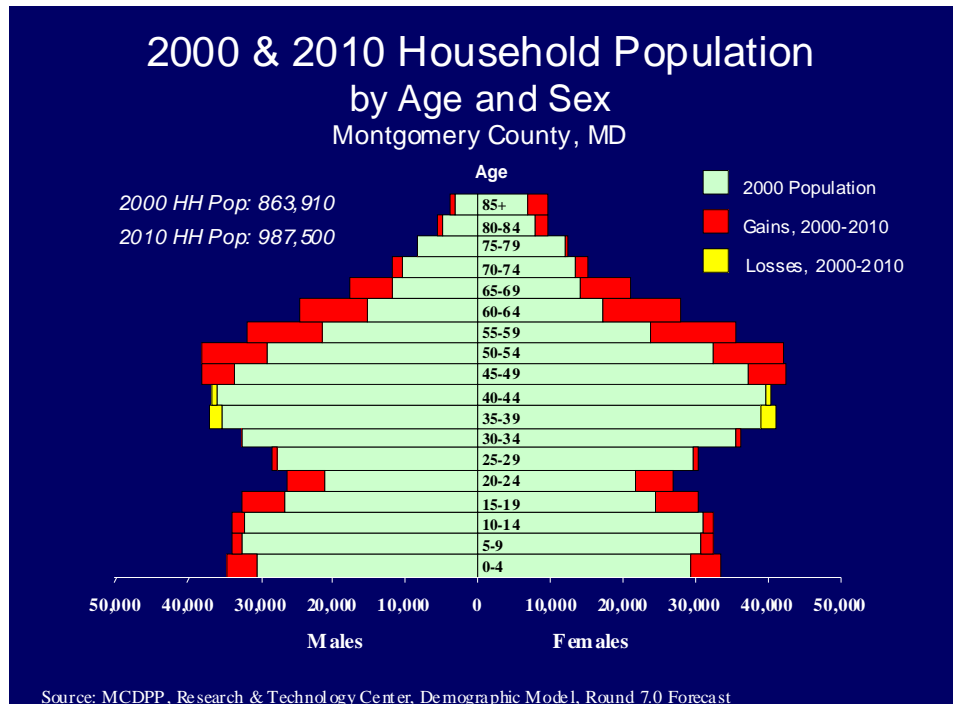
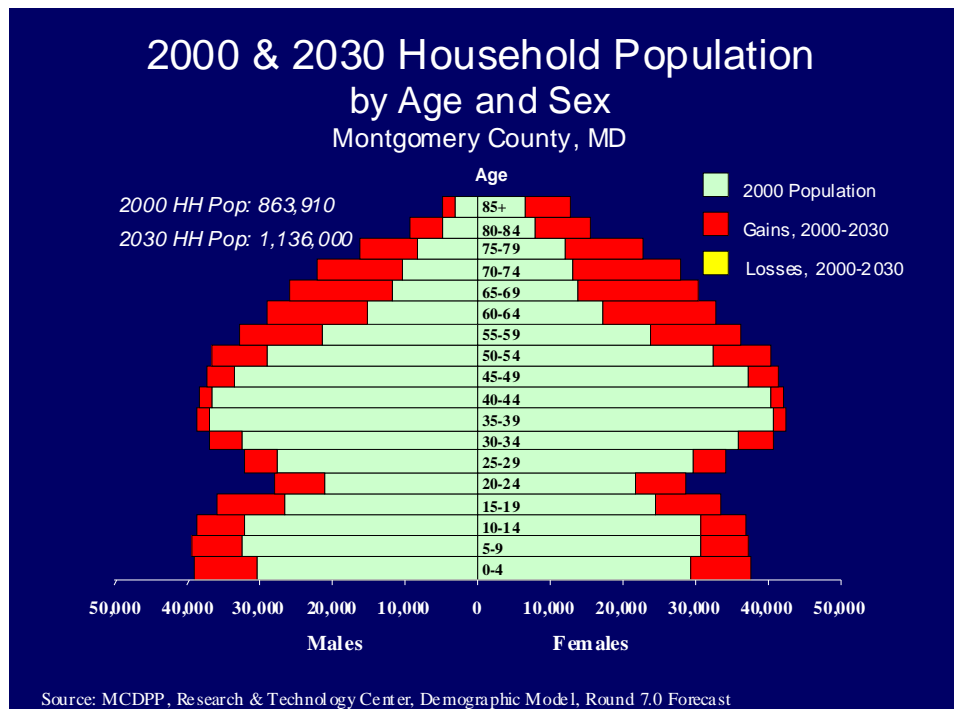


Figure 6: Household Population by Age/Gender 2000 & 2030



### Where Seniors Reside

In 2003, the planning areas with the most seniors were:

Bethesda/Chevy Chase	16,140
Aspen Hill	15,605
Gaithersburg & Vicinity	10,880
Kensington/Wheaton	10,215
N. Bethesda	8,560

Figure 8 shows the projected senior population change through the year 2010.

In 2030 the planning areas with the most seniors will change slightly:

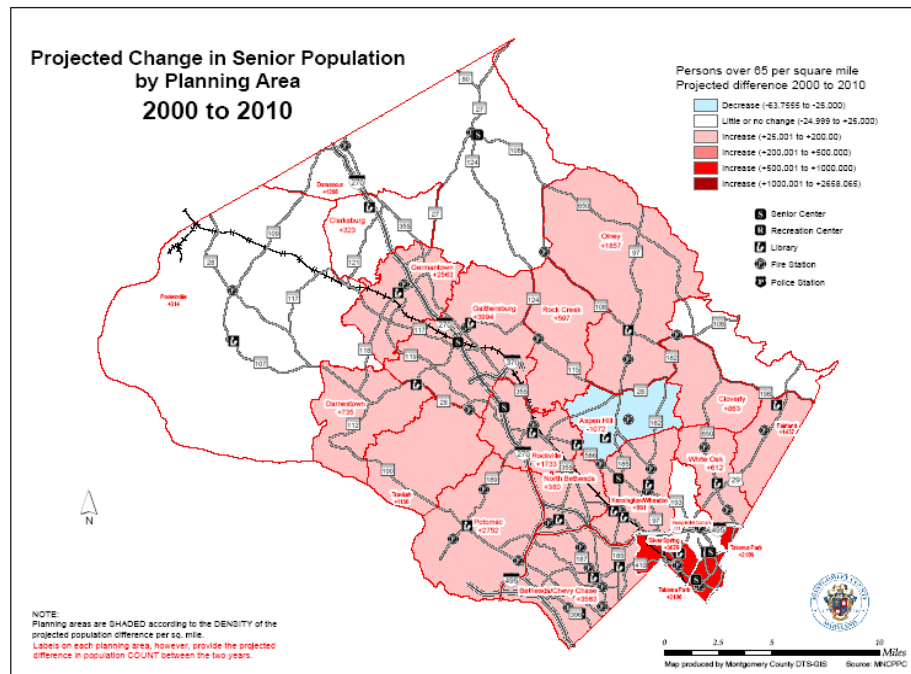
Bethesda/Chevy Chase	27,492
Gaithersburg	25,919
Kensington/Wheaton	15,552
Germantown	14,345
Silver Spring	13,126

**Figure 7: Senior Citizen Type of Residence**

Montgomery County Residents	Single Family	Townhouse	Garden Apt	High Rise
Total Resident Population	529,145	181,630	144,440	59,685
Age 65-74	33,336	9,263	6,644	6,625
75 and Older	26,986	6,175	8,666	14,145
Total Seniors	60,322	15,438	15,310	20,770
Age 65-74 (% of Total Population)	6.3%	5.1%	4.6%	11.1%
75 and Older (% of Total Population)	5.1%	3.4%	6.0%	23.7%
% of Total Population	11.4%	8.5%	10.6%	34.8%

Source: U.S. Census 2000

Most senior citizens, 60,322, live in single family homes in Montgomery County. This is followed by 20,770 seniors living in high-rise buildings, or more than one-third of all County high-rise residents.

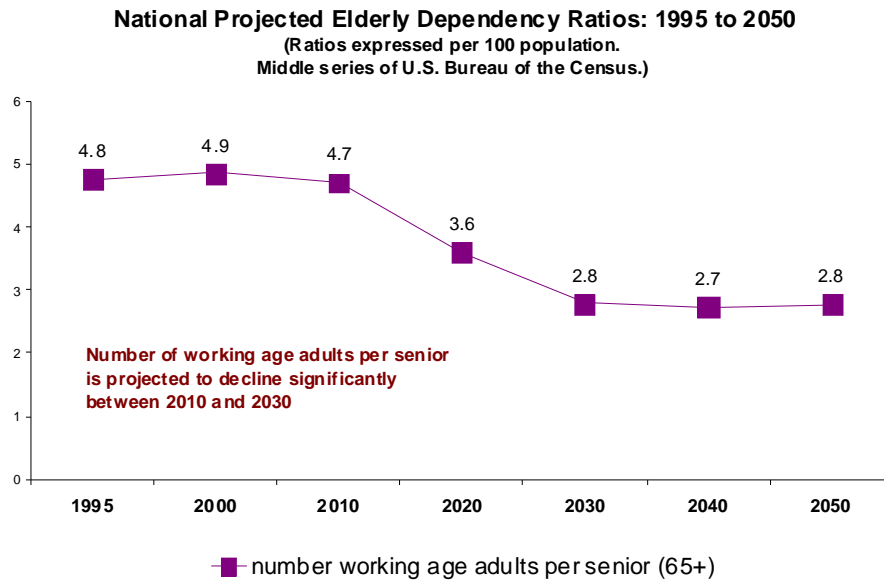
**Figure 8: Projected Change in Senior Population by Planning Area 2000-2010**

Source: U.S. Census 2000

### Decline in the Number of Caregivers

Currently 80% of the long term care of senior citizens is provided by family members. However, the number of individuals, family members, certified nursing assistants and professional caregivers available to provide this care will decline over the next 30 years (See Figure 9).



**Figure 9: Ratio of Working Age Adults Per Senior 1995-2050**

In 1999, the Center on an Aging Society at Georgetown University reported that adult children accounted for 44% of the primary caregivers to people age 65 or older living in the community another 41% of primary caregivers are spouses, 10% are other relative and 5% are non-relatives.

After 2015, the number of people needing long-term care is likely to increase substantially. At the same time, the overall labor force relative to the size of the population is likely to be smaller than today.

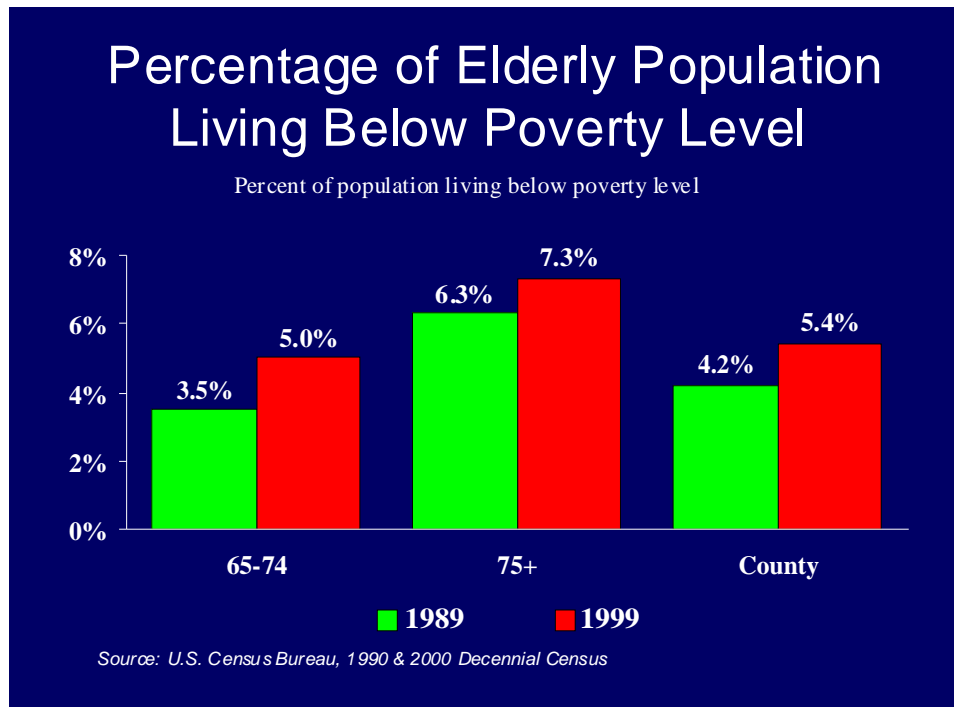
### Economic Factors Affecting Seniors

The welfare of our seniors will continue to be a challenge due to the projection of declining income in retirement faced by the baby boomers. Recent statistics reveal that Montgomery County, MD is the fourth wealthiest county, in the United States, with a family per capita income of \$94,000 annually. A recent article on retirement in USA Today reported that the average balance in the 401k retirement plans of individuals between 50 -59 years old is only \$150,000. Conservatively, at 8% over a 20 year life expectancy would generate approximately \$1,254.66 a month or approximately \$15,000 annually, excluding Social Security benefits and possible pension benefits. Even if these baby boomers receive the maximum Social Security benefits their income would remain well below the county's per capita family income of \$94,000.

The percent of seniors living below the federal poverty line will continue to increase over the next 30 years. Recent statistics reveal that Montgomery County ranks in the top 10, in the

United States, in per capita income per household. As the percent of seniors increase the percent living below the poverty line will continue to increase (See Figure 10).

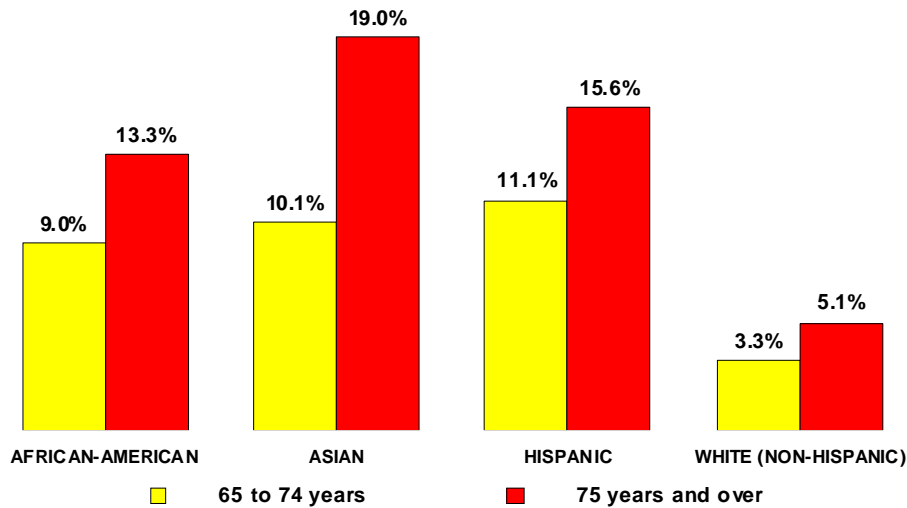
**Figure 10: Percentage of Seniors Living Below the Poverty Line**



Providing the necessary services to address the needs of low-income seniors, especially those ages 75 and older, from ethnic/cultural minority populations in the county will continue to be an important issue (See Figure 11).

**Figure 11: Percentage of Ethnic Groups Living Below the Poverty Line****Racial/Ethnic Groups Have Higher Levels of Poverty**

Percent Below Federal Poverty Line, Montgomery County, 2000



Source: U.S. Census 2000

**Senior Citizen Risk Factors**

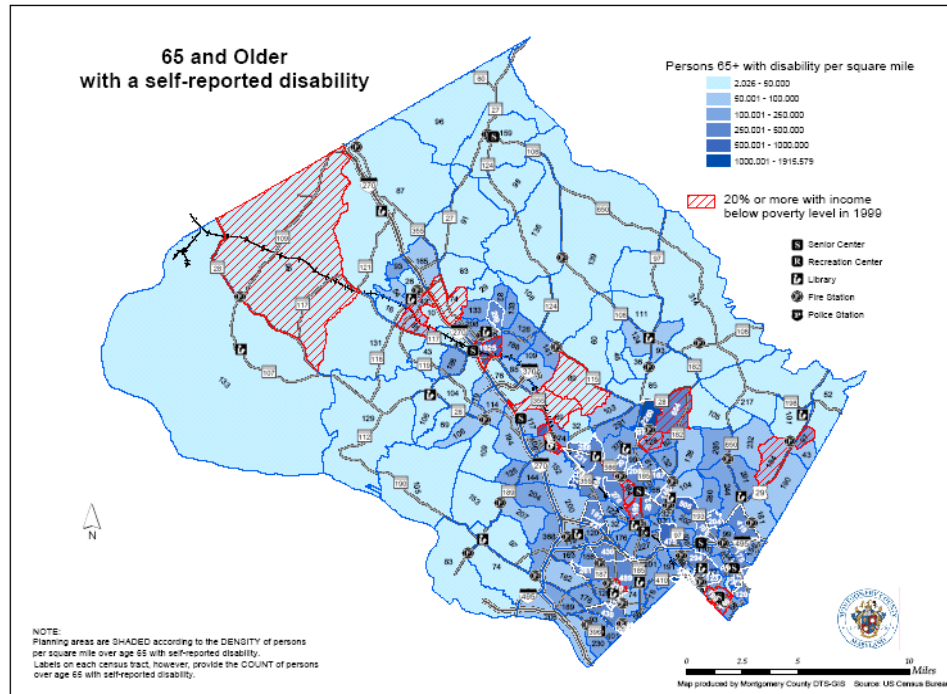
In the U.S., between the years 1999-2002, persons age 65 and older sustained 27% of all civilian fire deaths while comprising only 12% of the total U.S. population. Seniors age 75 and older sustained 16% of the civilian fire deaths despite comprising only 6 percent of the population.

Over the past 22 years (1980–2002) the percentage of the elderly perishing in fires has remained constant at 23%. This emphasizes the need, as a society, to aggressively address the issue of home fires among the elderly. The percentage of the elderly who sustained injuries from fire over the same period remained constant as well. If nothing is done, the number of seniors killed or injured by fire will increase with the increase in the number of seniors.

Numerous factors contribute to the higher risk. Aging causes the skin to become thinner and more vulnerable to fire. Additionally, reflexes slow down. The likelihood of taking medication that causes drowsiness further slows the reflexes.

Seniors are at increased risk of injury and death in a fire due to sensory and cognitive impairments, physical disability, mobility impairments and alcohol and prescription drug use (See Figure 12).

Figure 12: Senior Citizens with Self Reported Disability



Source: U.S. Census 2000

## Sensory Impairments

The 2000 census reports 9,824 Montgomery County seniors age 65 and above with sensory impairments. This represents 5.3% of the county's senior population

**Smell** – The sense of smell diminishes as people age. By age 60, 30% of individuals have some impairment in their sense of smell; by age 80 this impairment affects over 60% of seniors. A sense of smell can be helpful in detecting fire during waking hours. The smell of “something burning” often leads to the discovery of a fire, a potential fire or a stove or oven left on after cooking has concluded.

**Touch** – Skin changes associated with aging decrease the sense of touch. The ability to feel whether something is hot, such as an appliance overheating, can trigger a quick reaction to prevent a fire. The natural thinning of the skin's outer layer increases the risk for burns and increases their severity. Older skin can take up to four times longer to heal than the skin of a younger person. Also, because older adults frequently feel cold, they may seek economical ways of adding more heat to their environment through the use of space heaters etc. which pose an increased fire risk.

**Vision** – 18% of older Americans suffer from eye impairments. Vision impairments decrease the ability to see fires, falling candles or fallen cigarettes. It also hampers the ability to find doors and escape routes in a fire.

The most typical changes to the eye caused by aging are: loss of focus, declining color sensitivity, and a need for more light. There is a limit to vision correction with glasses. Finding and wearing glasses can be a problem especially when awakened at night in an emergency situation.

**Hearing** – The prevalence of hearing impairments increases with age; 30% of adults aged 65 to 74 have a hearing impairment but by age 85, 60% are affected. The inability to hear a smoke alarm or other warning sounds of fire places the older adult at great risk. Preliminary research indicates that older adults have difficulty being awakened from sleep by the standard home smoke detector, especially those emitting a constant, unwavering signal.

**Memory Impairments, Dementia and Alzheimer's disease** - 11, 624 (12.6%) Montgomery County seniors are affected with these conditions. In 2002, 15% of men and 11% of women had some form of moderate to severe memory impairment. Because these conditions affect reasoning and basic memory, these individuals are at substantial risk of injury or death from fire.

**Disability and Mobility Impairments** - 20, 274 (10.9%) of Montgomery County seniors report having a physical disability. 6,881 (3.7%) report a self-care disability and 15, 850 (8.5%) report a go-outside-the-home disability.

These impairments hamper the ability of older adults to respond to fires and escape burning structures. Nationally, only 49% of households with an older person with impaired mobility have made modifications to increase the home's safety or accessibility. This creates additional barriers for the disabled senior to exit the home safely in a fire.

### Senior Citizen Income

5,467 (5.3%) Montgomery County seniors have an annual income below the federal poverty level (See Figure 10). 10,391 (20.8%) seniors have an annual income below \$25,000. Montgomery County, Aging and Disability Services consider \$25,000 as a more realistic measure of poverty because of the very high cost of living in this area.

Rising energy costs may cause low-income seniors to turn to less costly methods for heating and lighting their homes, such as the use of propane appliances, space heaters, gas ovens and candles, all of which increase the risk of fire.

Additionally, senior citizens are less likely to expend funds for the maintenance of their heat producing devices resulting in unsafe malfunctions as the appliances age.

### Alcohol and Prescription Drugs

As the body ages it goes through changes that alter the effect of alcohol and medications. Decreases in muscle density, fluid volume and reductions in body weight prolong the length of time alcohol stays in the system thus increasing the likelihood of intoxication.

An increase in the number of medical problems can lead to a rise in the number of medications that are routinely taken. Eighty-three percent of senior citizens take a prescription drug. Use of drugs in combination with alcohol carries a risk, and multiple drug use increases that risk.

Alcohol and prescription misuse affects 17% of persons 60 and older. Medications for sleeping, pain, diuretics, anxiety or depression, as well as, antihistamines and decongestants are some of the medications that should never be mixed with alcohol. In fact, older adults are hospitalized more frequently for alcohol related problems than for heart attacks. Medicare reports spending \$230 million annually on alcohol related illnesses in older adults.

In Montgomery County in 2004, 60 (5%) impaired drivers involved in a crash in Montgomery County were aged 60 and older. Of these older, impaired drivers, 14 were injured and one was killed in the crash.

During CY2004, 449 pedestrians were involved in a total of 424 crashes. Of those pedestrians, 69 (15%) were senior citizens aged 60 years and older. Of the senior pedestrians, 62 were injured and four were killed in the crash. In at least two of these deaths the senior was under the influence of alcohol and/or drugs. When looking at fire safety in the senior citizen population it is important to consider the possibility that alcohol and/or drug use as a contributing factor.

Alcohol impairment poses great risk causing memory loss, decreased judgment and a slowed thought process that can increase high risk behaviors such as unattended cooking, reaching over a gas stove with loose clothing or leaving a cigarette burning. Impairment slows reflexes causing a delay in both realizing there is a fire, the risk of fire, and/or reacting to it. Drowsiness associated with alcohol can result in a senior falling asleep and may not allow them to be easily aroused by noise and smells putting them at further risk for fire injury or death. –

### Misuse of Smoking Materials

The misuse of smoking materials by senior citizens represents a significant risk to their life and fire safety. This behavior continues to produce tragic results. Seniors, living alone and in concert with associated impairments, misplace their burning cigarettes, drop smoldering cigarettes in combustible bedding and furniture, and/or ignite their clothing.

### Summary of Senior Citizen Fire Safety Challenges (No Priority)

- I. Senior citizen fire safety challenges
  - A. Significant senior citizen population growth
  - B. Continued increase in the number of senior citizens living alone
    - 1. Lack of appropriate fire/smoke detection and suppression systems
    - 2. Lack of appropriate egress from their residence
    - 3. Lack of appropriate code and standards addressing seniors living alone
  - C. Unattended senior citizens that are immobile and isolated from assistance in emergencies
    - 1. Decline in available family members, nurses and professional caregivers for senior citizens
  - D. Lack of senior citizen fire safety understanding and education by all stakeholders
    - 1. Continued increase in sensory, disability and mobility impairments as the senior citizen population ages
  - E. Continued increase in the number of senior citizens living below the poverty line; especially racial and ethnic groups
    - 1. Lack of maintenance of residences, appliances, fire detection and suppression systems
    - 2. Use of candles for lighting
    - 3. Use of portable heaters
    - 4. Use of ovens for heating
  - F. Misuse of prescription drugs and alcohol
  - G. Misuse of smoking materials
  - H. Misuse of cooking procedures and appliances

### ***Organization and Mission of the Senior Citizen Fire Safety Task Force***

Recognizing the alarming trend of senior citizen fire injuries and fatalities across Montgomery County, the County Executive and Fire Chief Thomas Carr, Jr. determined the best approach to identifying effective strategies and procedures to reduce the phenomenon was to convene a geographically representative group of culturally and socially diverse citizens together with individuals representing senior citizen interests, organizations and wellbeing to study the occurrence.

Effective March 24, 2006, the Senior Citizen Fire Safety Task Force was established as an Executive committee as follows:

#### **A. Purpose**

The Task Force must advise the Executive and the Fire Chief on strategies and procedures designed to reduce the risk of fire-related deaths and injuries to senior citizens in the County. This includes providing advice on:

1. Approaches to reduce fire risk, injury, and deaths among senior citizens;
2. Demographic and community changes (such as housing density) that affect safety of the elderly;
3. Educational efforts to be undertaken to improve awareness among senior citizens and their caregivers of fire injury and death prevention strategies;
4. Resources needed to reduce fire risk among senior citizens in the county;
5. Legislation at State and County levels to reduce fire risk, injury, and deaths among seniors, and;
6. Encouraging the National Fire Protection Association (NFPA) to write standards for senior citizen housing.

The Task Force is expected to submit an interim report to the Executive and the Fire Chief after six months of operation, at the latest. An annual report is due after one year and the final report is due at the end of two years.

#### **B. Composition**

7. The Task Force is composed of no more than 25 members, who are appointed by the Executive. A majority of the public members shall be senior citizens (defined as age 65 and older). Members are appointed for two year terms. The Task Force is expected to complete its work by May 2008.



8. The Executive may appoint the following ex-officio members from the designated public agencies:
  - a. Two members from the Montgomery County Fire and Rescue Service,
  - b. Two members from the Department of Health and Human Services,
  - c. Two members from the County's Commission on Aging,
  - d. One member from the Housing Opportunities Commission staff or residents,
  - e. One member from the County's Commission of People with Disabilities,
  - f. One member from the Department of Liquor Control,
  - g. One member from the Offices of the County Executive.
1. The remaining members may include representatives of the following:
  - a. The Burn Center at Washington Hospital Center (the regional burn center).
  - b. Apartment Owners and Builders Association (AOBA)
  - c. Management of major senior housing complexes in the County (e.g. Leisure World, Asbury Methodist Village, Riderwood)
  - d. Senior citizen organizations
  - e. Public relations and/or media outlets (Comcast, MPT)
  - f. Residents of the County
1. The membership of the Task Force should be broadly representative of persons of diverse social, cultural, and economic backgrounds, and should include residents from a variety of geographic locations in the County.
2. The Executive will designate the Chair and Vice Chair, or Co-chairs, of the Task Force.

C. Administrative Support

Administrative support to the Task Force will be provided by the Department of Fire and Rescue Services.

The County Executive appointed the following individuals to the Senior Citizen Fire Safety Task Force:

#### PUBLIC MEMBERS

Bruno, Hal  
Chevy Chase, MD 20815

Rabinow, Jacqueline VICE CHAIR  
Silver Spring, MD 20906

Livingston, John C., Jr.  
Davidsonville, MD 21035

Shnider, Irving  
Silver Spring, MD 20906

Notley, David P.  
Bethesda, MD 20814

Siegel, Alan  
Bethesda, MD 20817

Poole, Gloria  
Rockville, MD 20853

Thomas, J. Paul CHAIR  
Silver Spring, MD 20904

Prichard, Audrey M.  
Dickerson, MD 20842

Thompson, Barbara Ricks  
Wheaton, MD 20902

#### EX OFFICIO MEMBERS

Fire and Rescue Service  
Delaney, William  
Rockville, MD 20850

Public Health Services – Licensure and  
Regulatory Services  
Cohen, Susan  
Rockville, MD 20850

Kelleher, Matthew  
Rockville, MD 20850

Offices of the County Executive  
Reilly, Scott, Assistant CAO  
Rockville, MD 20850

Commission on People with Disabilities  
Hamlin, Lise  
Rockville, MD 20850

Commission on Aging  
Goldbloom, Irwin  
Chevy Chase, MD 20815

Department of Health and Human Services

Aging and Disability Services  
Campbell-Kotler, Margaret  
Rockville, MD 20850

Leahigh, Suzy  
Silver Spring, MD 20902

#### ORGANIZATIONAL MEMBERS

Management of Major Senior  
Housing

Albright, Walter N.  
Asbury Methodist Village  
Gaithersburg, MD 20877

Curtin, James A. MD  
Leisure World of Maryland  
Silver Spring, MD 20906

Jones, Greg  
Erickson Retirement Communities  
Oakcrest Village  
Silver Spring, MD 20904

Housing Opportunities Commission  
Zanger, Bernadette  
Bethesda, MD 20814

GEICO Insurance

Grenier, Kevin  
Washington, DC 20076

Department of Liquor Control

Durbin, Katherine M.  
Rockville, MD 20855

The Burn Center at  
Washington Hospital Center

Hollowed, Kathleen A. RN  
Washington, DC 20010

Apartment and Office Building  
Association (AOBA)

Hoover, Lesa N. Esq.  
Annapolis, MD 21401

STAFF LIAISON

Best, John M., Deputy Fire/Rescue  
Chief (Ret.)  
Fire and Rescue Service  
101 Monroe Street  
Rockville, MD 20850

Ross, Jacqueline D., Office Services  
Coordinator  
Fire and Rescue Service  
101 Monroe Street  
Rockville, MD 20850

## ***Planning, Strategy and Methodology***

The Senior Citizen Fire Safety Task Force, supported by the Task Force leadership and staff liaison, immediately initiated plans to accomplish the charge of Executive Order #103-06. Planning and strategy building began with the study of various approaches to methodology development in meeting Task Force objectives. As a first step, the fire safety interests and expertise of the individual members were identified during the early regular meetings. During these early meetings, fatal fire incidents involving senior citizens were presented and discussed. A mutual understanding was achieved utilizing the experience drawn from the previous fire incidents and their individual characteristics. As Task Force members gained familiarity with one another's expertise, a sense of common purpose evolved.

The process of establishing a working agenda and methodology required the identification and selection of various approaches to Task Force consensus building. This was done by presentation of several methods of achieving effective and successful group process outcomes. The task was made more difficult due to the wide array of objectives described in the Task Force mission. It was agreed that the mission objectives would require the partitioning of the Task Force into focused topic components.

### **Task Force Objectives**

Based on this organizational approach the task force objectives were established as follows:

- Identify strategies to reduce fire risk among senior citizens
- Identify strategies to reduce fire casualties and fatalities among senior citizens
- Identify changes to building and fire codes and standards for new and existing structures that anticipate/acknowledge the aging population and appropriate changes to incorporate safety features
- Explore the addition of new use "independent living" group within the national building and fire model codes and standards
- Identify new and emerging off-the-shelf technologies that bridge the gap between code-compliant new buildings and non-compliant existing buildings
- Identify demographic changes and community changes that effect the safety of senior citizens
- Identify personal and community based procedures and requirements that senior citizens and caregivers can adopt and practice to increase senior citizen fire safety

### **Action Steps**

A major focus of the Task Force is the preparation of interim and subsequent reports. To facilitate the focused topic group outcomes and to develop a strategy for achieving standardized reporting requirements, the following action steps were discussed and agreed upon:

- Agree on group leaders
- Delimit the select topics
- Identify information sources, references, and experts
- Develop topic outlines
- Determine assignments based on expertise/interest
- Collect data, write topic sections, and review materials
- Assemble topic narratives and references
- Present for full Task Force review and comment
- Edit and modify draft

### Methodology

Accordingly, the following methodology was adopted to drive the group process:

- Assign members to topic groups based on interest/expertise
- Convene topic groups for technical issue study/writing
- Identify technical and best practices information sources
- Develop working topic outlines
- Report progress and issues routinely to full Task Force
- Receive Task Force input for topic draft revision
- Complete re-writing and editing for publication

Early decisions in adhering to this process required the Task Force to consider such issues as whether the smaller topic group should meet outside of regular Task Force scheduled meetings, the format for reporting draft technical recommendations for larger Task Force consideration, how to receive and document substantive modifications to draft recommendations and supporting evidence, and whether to open topic group participation to experts outside of Task Force membership.

### Results Oriented Strategy

Following discussion of these issues, the Task Force agreed on a rapid response schedule given the critical nature of recent fire incident fatalities and the time constraints imposed by the requirement of a six months interim report. The task force also agreed that given the multi-faceted nature of their mission and the technical components of the task, that topic focused sub groups would be an effective approach.

### Standardized Reporting

It was unanimously agreed by Task Force members that the topic group reporting and writing assignments would adhere to the following standardized format to meet time constraints:

- Introduction of topic emphasis and scope
- Detailed technical recommendations in priority order
- Supporting technical, engineering, scientific rationale

- Resource allocation for achievement of recommendation.

These plans resulted in implementing a strategy and methodology around the establishment of five topic oriented sub groups within the task force. The sub groups, through their deliberations, would review and advise on the six areas prescribed by Executive Order 103-06, other areas of concern for senior citizen fire safety, and report to the full task force membership.

#### Topic Focused Sub-Group Assignments

Five topic focused sub groups were established by the Chair on a voluntary basis as follows:

##### Building Technology and Standards

Albright, Walter  
Cohen, Susan  
Jones, Greg  
Kelleher, Matthew  
Notley, David  
Poole, Gloria  
Siegal, Alan  
Zanger, Bernadette

##### Community Characteristics and Demographics

Campbell-Kotler, Margaret  
Durbin, Katherine  
Grenier, Kevin  
Leahigh, Suzy  
Thompson, Barbara Ricks

##### Public and Provider Education

Curtin, James  
Delaney, William  
Hollowed, Kathleen  
Livingston, John Jr.  
Reilly, Scott  
Shnider, Irving

##### Advocacy and Legislation

Hal Bruno  
Irwin Goldbloom  
Lesa Hoover  
Greg Jones  
Suzy Leahigh

David Notley  
Audrey Prichard

Resource Allocation

Kevin Grenier  
Gloria Poole  
Irving Shnider  
Alan Siegel

Task force members were asked to select their “second choice” of sub groups, as well, and member were encouraged to participate in additional groups as their expertise dictated and their time allowed. The Resource Allocation sub group was not assigned at this time. This group will be assigned as the task force gets closer to completing its final report.



The Public and Service Provider Education Sub-Group in Break-Out Sessions





### ***Task Force Study and Resources***

Task force members were provided background information and statistics explaining the County's senior citizen fire casualty and fatality phenomenon. Several meetings were devoted to educating members to this experience and achieving a baseline understanding of fire behavior and other related knowledge required to develop technical recommendations and provide supporting rationale for policy maker consideration.

Dr. Charles Smith of the Department of Health and Human Services, Aging and Disability Services provided a comprehensive presentation educating the task force to Montgomery County's senior citizen's characteristics and demographics.

Reports and scenarios of fire incidents involving senior citizens in the County were presented as they occurred with pertinent and applicable educational audio/visual aids. Task Force members requested data resources of staff members routinely during the sub group deliberations.

#### **Benchmarking**

The Task Force initiated a "benchmarking" effort to acquire National Fire Incident Reporting System (NFIRS) data to determine the relationship of Montgomery County's senior citizen fire casualty and fatality phenomenon as compared to communities in the United States having similar senior citizen demographics, populations and characteristics.

The County, to maintain a consistent analysis, has determined a number of communities meeting these requirements as follows:

Baltimore County, MD  
Fairfax County, VA  
Jefferson County, KY  
Mecklenburg County, NC  
Palm Beach County, FL  
Westchester County, NY

Task Force requests for NFIRS data were answered by Baltimore County, Fairfax County and Jefferson County.

While Montgomery County and Baltimore County experienced the same number of senior citizen fire fatalities in the past ten years (See Appendix C). Montgomery County has experienced an almost "epidemic" occurrence of senior citizen fire fatalities in the past four years in comparison to the other benchmark jurisdictions (See Figure 13).

A complete comparison of NFIRS data relating to gender, age, hour of day, day of week, month, property type, and area of origin is presented graphically in Appendix C.

Figure 13

Year	Montgomery County	Fairfax County	Baltimore County	Jefferson County
2006	4	3	1	1
2005	5	1	0	2
2004	2	2	1	0
2003	6	3	2	3
<b>Total</b>	<b>17</b>	<b>9</b>	<b>4</b>	<b>6</b>

### Study and Analysis

To identify task group topic areas for study and analysis in developing technical recommendations, the following preliminary outline was reviewed and accepted.

#### I. Building Technology and Standards

##### A. Codes, Standards, Regulations, Laws and Technologies

1. Current
2. Needed

##### B. Long-Term Care Facilities

1. Fire Risks
  - a) Nursing Homes
  - b) Assisted Living Facilities
  - c) Group Homes
  - d) Independent Living
  - e) Single Family Residences
  - f) Naturally Occurring Retirement Communities (NORC)

##### C. Community Characteristics and Demographics

1. Trends and Characteristics
  - a) Increases in the 65 and Older Population
  - b) Profile of the Older Adult
2. Residential Fires and Older Adults
3. Fatalities and Injuries
  - a) Age
  - b) Gender
  - c) Time of Day
  - d) Month
  - e) Location
  - f) Activity when killed or injured
  - g) Cause of the Fire
4. Fire Risk Factors to Older Adults
  - a) Sensory and Cognitive Impairments
  - b) Disabilities and Mobility Impairments
  - c) Alcohol, Tobacco and Prescription Drugs
5. Economic and Social Factors

## II. Public and Provider Education

### A. Five residential models for senior occupancy

1. Planned Retirement Communities & Continuing Care Communities
  - a) Large, highly organized, i.e. Leisure World, Asbury, Riderwood.
  - b) Has internal communication vehicles including newspapers, bulletin boards, cable channels, sponsored events.
2. Age restricted senior multifamily housing
  - a) Market rate and assisted (private for profit, non-profit, and publicly owned) senior housing.
  - b) May have some internal communication vehicles.
3. Other Age-restricted and Senior Care Facilities – group homes, assisted living, and nursing homes.
4. Centrally operated with staff handling most, if not all resident needs.
  - a) Communications best directed to staff.
  - b) May be member of umbrella organization or trade association
5. Naturally Occurring Retirement Communities (NORCs)
  - a) Private or public multifamily housing with high concentrations of seniors.
  - b) May or may not have centralized communications.
  - c) May already have established service delivery system that can be utilized
6. Seniors living at home - seniors living alone and seniors living with family or relatives
  - a) No centralized communication vehicle
  - b) Relies on mass media, special interest publication, and service providers for information.
  - c) Served by home health care industry
  - d) Personal visits may be most effective

### B. Other Audiences for Senior Fire Safety Message

1. Families of Seniors
2. Receive senior fire safety message via newsletters and e-mail and pass on to seniors
3. Can advocate for seniors in making fire safety improvements in residential facilities
4. School Children
  - a) Often part of multigenerational households
5. Community Services: groceries, pharmacies, medical offices
6. Place information in facilities frequented by seniors and their families
7. Owners, Operators, and Managers of Senior Housing
  - a) Educate the industry about best practices for fire prevention and safety, including advantages of fire sprinkler systems
8. Provide fire safety information for dissemination to residents
9. Special Outreach to Ethnic and Racial Minorities
  - a) Need to provide information in other languages
  - b) Provide information in non-written form, regardless of language
  - c) Provide information to care givers

- (1) Recognize multigenerational nature of some ethnic families

C. Media – Avenues of Communication

1. Electronic

- a) Television – Public Service Announcements (PSAs)
- b) Radio – PSAs, interviews
- c) Cable – PSAs, educational programming on public interest channels
- d) Telephone hotline – recorded fire safety information on a variety of topics, ability to leave questions for FRS response.
- e) Web-based

- (1) Frequently Asked Questions (FAQs) on fire safety

f) Streaming video

- (1) Supported by a relatively high level of computer literacy among seniors

D. Fire Education and Prevention

- 1. References and Resources
- 2. Campaigns
- 3. Facilities
- 4. Methodologies

E. Target Areas

- 1. Long-Term Care Facilities
- 2. Nursing Homes
- 3. Assisted Living Facilities
- 4. Group Homes
- 5. Independent Living
- 6. Single Family Residences
- 7. Multi-Family Residences
- 8. Naturally Occurring Retirement Communities (NORC)

III. Advocacy and Legislation

A. The Advocacy and Legislation topic sub group will review all task group recommendations to determine appropriate and timely legislative action and advocacy initiatives.

IV. Resource Allocation

A. Designated task group discussion leaders and other select task force members will comprise the Resource Allocation task sub group to determine resources and funding needed to implement the approved formal recommendations.



Full Task Force Technical Education Session

### Expert Presentations

Senior Citizen Fire Safety Task Force members represented a cross section of Montgomery County geographically and by expertise. In order to bring all of the members to a common level of knowledge in the senior citizen fire fatality challenge members requested that certain experts make presentations to the full Task Force.

- |          |   |
|----------|---|
| 07/07/06 | William Delaney, Public Educator, MCFRS<br>“Fire Death Statistics in Montgomery County.”  |
| 07/21/06 | William Delaney, Public Educator, MCFRS<br>“Fire Behavior”  |
| 08/18/06 | Dr. Charles Smith, Research Analyst, DHHS, Aging and Disability<br>“Current and Future Demographics Overview of Montgomery County Seniors”  |
| 11/17/06 | Deputy Chief (ret.) John M. Best, Master Firefighter Matthew Kelleher,<br>“History, Operation, and Performance of Fire Sprinkler Systems”   |
| 12/08/06 | Sybil Greenhut, MSN, Senior Mental Health Programs, Behavioral Health and<br>Crisis Services, DHHS<br>“Co-occurring Disorders in Older Adults”  |
|          | Bonnie Klem, MSN, Adult Protective Services; Aging and Disability Services,<br>DHHS<br>“Hoarding Behavior in Older Adults”  |
| 01/12/07 | Fire Marshal Ivan Humberson, City of Gaithersburg, MD<br>“Retro-Residential Fire Sprinkler Legislation”   |
| 01/12/07 | Master Firefighter Matthew Kelleher, MCFRS<br>“Monterey Condominium Retro-Fire Sprinkler Installation”  |
| 01/26/07 | Shannon Boyle, Public Relations Coordinator, GEICO<br>“GEICO Public Relations/Communications Plan”  |
| 02/09/07 | Professor Kathleen Hoke Dachille and Jill Athencio, Center for Tobacco<br>Regulation, University of Maryland.<br>“Fire Safe Cigarettes; An Effective Tool for Reducing Cigarette Caused Fires.” |
| 04/13/07 | Peter Piringer, Public Information Officer, MCFRS<br>“Media Strategy Planning”  |

### Fire Incident Presentations

Six senior citizen fire fatalities occurred during the first year of the Task Force term. MCFRS provided detailed, informative presentations to the Task Force outlining the facts surrounding each of the fires including the date of the incident, gender, age, location, type of structure, and apparent fire cause and origin as follows:

11/24/06	Female, age 83 Chevy Chase Multi-family high rise Living room Discarded smoking materials
08/27/06	Female, age 78 Kensington Single family dwelling Discarded smoking materials
01/19/07	Female, age 80 Silver Spring Multi-family high rise Kitchen Cooking
03/15/07	Female, age 74 Silver Spring Multi-family Bedroom Undetermined/suspected accidental
05/07/07	Male, age 88 Kensington Single family dwelling Kitchen egress Suspected refrigerator malfunction
05/07/07	Female, age 84 Kensington Single family dwelling Kitchen Suspected refrigerator malfunction

### Literature and Resource Identification:

In addition to the informative data provided by Dr. Smith and the excellent presentations by topic experts on a wide array of senior life safety issues, the Task Force identified information sources to assist in the research, study, and formulation of technical recommendations. Each of the five topic focused task groups determined how best to address the formal mission statements relevant to their objectives. Each group was assigned the task of identifying those literature citations, information sources, and other materials essential to the completion of their work. As examples, the building technology task group requested staff liaison to provide the Montgomery County Fire Rescue NFIRS Data for 1996 to present. The public and caregiver education task group sought the U.S. Department of Homeland Security, U.S. Fire Administration 2006 report.

It should be noted that the MCFRS staff liaison and Task Force representatives were familiar with, and knowledgeable of, the comprehensive fire science and engineering literature and technical resources to readily provide all requested documents. This enabled the task groups to move quickly into the in-depth study and consideration of issues, innovations, and best practices across the national fire safety field.

From the first Task Force meeting, it was agreed that the essence of future recommendation to be developed on senior citizen fire safety would be based on technical data and research results rather than emotional considerations. This has been upheld throughout the Task Force deliberations to date and is expected to be the spirit of future work throughout the second year of operation.



## ***Task Group and Task Force Recommendations***

### **Rationale for Prioritization of Recommendations**

The Task Force members felt strongly that to facilitate management and implementation of their 30 approved recommendations a ranking method was in order. Therefore, the following method was unanimously agreed to suggest priority rankings for implementation: (1) immediate, (2) short term, and (3) long term.

### **Public and Service Provider Education Recommendations**

#### ***Introduction***

It is essential in minimizing future senior citizen fire deaths and injuries that highest priority be given by county policy makers to implementation of a comprehensive, ethnically diverse and culturally sensitive multimedia public education program to facilitate the creation of a culture of fire safety for senior citizens in Montgomery County. Key themes would include:

- 1) causes of senior related fires,
- 2) focus fire safety tips, and
- 3) participation by secondary audiences including county residents and family members. Such a program would be staffed and implemented by the MCFRS.

#### ***Immediate Implementation:***

1. **Establish a senior citizen fire safety staff position** for leadership in fire safety, oversight of Task Force recommendation implementation, training and education.
2. **Form a coalition of industry partners** to assist the MCFRS to achieve its fire safety awareness communication goals including a network of relevant public agencies and private sector organizations.
3. **Develop a fire prevention publicity campaign** with Task Force guidance to include press releases, public service announcements, video news releases, a unique MCFRS frequently asked questions site, aging featured brochures for targeted distribution, and a speaker's bureau. \_Develop a specific marketing strategy for senior citizen fire safety to include community service volunteers drawn from public and private high schools.
4. **Utilize media events** of senior related fire incidents to educate citizens, care givers, family members and service professionals to special causes and hazards.

### ***Short Term Implementation***

5. **Initiate a public educational program** to encourage the installation of approved automatic fire sprinkler protection in all existing residential properties with special emphasis on seniors living independently throughout Montgomery County.
6. **Identify target audiences and user groups** residing in senior living communities, senior centers, and other residential facilities for priority attention via direct and media contact for fire prevention messages on smoking materials, kitchen and cooking behavior, heating/electrical equipment, and maintenance of approved alerting devices and systems.
7. **Initiate a senior life saving information program** including the utilization of MCFRS light duty personnel and training academy recruit classes to conduct a direct door-to-door offering of services to senior citizens such as free home visits on safety, evaluation of existing home smoke alarm equipment and installation when necessary, and promotion and installation of cooking safety equipment and hood based extinguishing systems.

### ***Long Term Implementation***

8. **Adopt senior literacy and safety training** to assist those seniors who may not have adequate skills in reading or comprehension to receive ethnically and culturally diverse safety training related to independent living options in later years.
9. **Suggest residential selection criteria** for use in public/caregiver programs to assist seniors and their families in selecting appropriate residential living options for seniors who are functionally impaired.
10. **Explore the feasibility of enabling persons with disabilities** to voluntarily register with the Montgomery County 911 system so that in the event of an emergency pertinent mobility impairment information is transmitted to first arriving emergency personnel.

### ***Rationale***

It is essential in creating a culture of fire safety across Montgomery County that the above referenced recommendations be carefully considered, prioritized, and implemented with all possible dispatch. The unique vulnerabilities of persons living independently and “aging in place” are of particular significance. It is from this population that the majority of county fire deaths have occurred in the past ten years. Because of the innovative nature of these suggested recommendations, this public and service provider education program may serve as a model for national demonstration and implementation in the future. Because of the high payoff in lives saved and catastrophic injuries prevented these recommended public and service provider education measures are an outstanding opportunity for MCFRS to once again provide national leadership and guidance.

## Community Characteristics and Demographics Recommendations

### ***Introduction***

A key information requirement of the Task Force in development of recommendations on fire safety issues was the identification of population characteristics, demographics, and high-risk populations specific to Montgomery County senior citizens. The community characteristics and demographics topic group has generated significant statistical information that serves as the driving force for many Task Force recommendations. The unique composition of the topic group provided broad experience in community features and population trends with a high level of relevant expertise in the knowledge of such features and community needs. This composition included select public and ex-officio members and organizational representatives.

Useful information sources were provided by Charles Smith, Ph.D. of the DHHS, Aging and Disability Services agency. Dr. Smith provided crucial information to the Task Force at large and also advised the community characteristics topic group in identifying information sources on changing senior citizen demographics, population trends, household living arrangements, high-risk disability cohorts, and social-economic features. As examples, useful information was generated on increasing frequency of senior citizens living alone, decline in the number of caregivers, and increases in senior citizens living below the poverty line all having major implications for Task Force recommendations as follows:

### ***Immediate Implementation:***

1. **Target seniors with hearing loss or other sensory impairments** to provide information and assistance with the installation of approved smoke alerting devices that address their sensory impairment such as visual, tactile, low and/or dual frequency and emerging technology.
2. **Increase collaboration between MCFRS and professional organizations** providing services for persons with sensory impairments to encourage their members to provide clients with information on the type of approved smoke detection devices most appropriate for their impairments.
3. **Request that county officials work with public utilities** to develop policies to enable utility companies to alert county public safety officials when utilities are to be shut-off in residences occupied by senior citizens.

***Short Term Implementation:***

4. **Establish a partnership with the Alheimers Association, National Capital Chapter** to develop fire prevention and safety education information for individuals with cognitive impairment and their families.
5. **Establish partnerships with appropriate service organizations representing mobility impairments and disabilities** including but not limited to multiple sclerosis, arthritis, cerebral palsy, spina bifida, and eldercare programs such as AARP to develop fire safety education information and training for individuals with limited mobility.
6. **Develop by DHHS and DLC new, innovative alcohol and substance abuse prevention, education, and treatment programs** designed for senior citizens.
7. **Develop a small grants program** to enable lower income communities and ethnic and culturally diverse communities within the county to design and implement fire safety awareness and prevention programs appropriate to their communities.

***Long Term Implementation:***

8. **Increase funding for the MCFRS's budget** to reflect the increased demand for public education and other related services due to the rapidly expanding senior citizen population.
9. **Develop by MCFRS those policies and procedures that** will require home health agencies and providers of oxygen, assistive equipment and, home care services to notify MCFRS for a home safety assessment to be conducted.

***Rationale***

The above referenced recommendations provide practical and realistic improvements in service, education, and policy development to address high-risk populations identified by the community characteristics and demographics task group. These populations have an additional level of vulnerability beyond those recognized in the normal aging process. As statistics demonstrate, implementing special targeted fire safety measures for these high-risk populations will significantly reduce fire death and injury and pay large dividends in preventing financial loss to life and property.

**Building and Technology Recommendations**

***Introduction***

Physical and mental impairments contribute significantly to senior citizen's inability to effectively react to life and fire safety threats.

The National Fire Protection Association identifies five general categories of impairments:

1. Mobility
2. Visual
3. Hearing
4. Speech
5. Cognitive

While the education of seniors, their families, caregivers and others around them is a major factor in their well being, inherent building features, approved fire detection and suppression systems and pre-emergency planning continue to be a major element in preventing senior citizen fire injuries and fatalities.

The technology exists today allowing society to readily adopt a culture of senior citizen life and fire safety, and assumes this effort as a public value so that senior citizens will no longer die from fire. This adoption and assumption would compare to the culture and public values associated with the national examples identified by the reduction of drunk drivers through MADD and DARE programs, the reduction of forest fires through the Smokey the Bear program, and the reduction of automobile accident fatalities through the “Click-it or Ticket” programs, to name a few. When we develop this culture and public value to senior citizen fire fatalities they will cease, or at a minimum, greatly reduce.

The following recommendations, in conjunction with life and fire safety education, outline a reasonable approach to preventing senior citizen fire fatalities; through pre-emergency planning; the installation of inherent building features; and approved fire detection and suppression systems:

### ***Immediate Implementation***

1. **Require that the County develop a program to assist in the financing of the implementation of the requirement to install approved fire sprinkler systems in existing residential facilities** owned by not-for-profit housing providers and public agencies, and in residential facilities where more than 20 percent of the units are income restricted or have rents controlled under a public program.

### ***Short Term Implementation***

2. **Require that the owner of all buildings more than seventy five (75) feet in height, serving as housing for senior citizens, housing institutional or educational occupancies, or such other buildings as may be required by the authority having jurisdiction, designate to the Fire Chief, a qualified individual responsible for life and fire safety for that building(s)** to insure compliance with applicable life and fire safety codes, standards and procedures.
3. **Require that any improvement to single family or duplex houses with modification costs exceeding 50 percent of the assessed structural value are required to install an**

approved fire sprinkler system throughout the structure within three years of issuance of a building permit.

4. **Require that all new licensed, assisted living facilities, group homes (As defined in Appendix B) and residential living facilities install an approved fire sprinkler system.**

### *Long Term Implementation*

5. **Require that all existing residential buildings with three or more living units, regardless of ownership, shall have an approved fire sprinkler system installed throughout** within five years of the effective date of the requiring legislation.
6. **Require that all licensed residential facilities will have a contract with a licensed installer to install an approved fire sprinkler system within one year of their license renewal date,** after the passage of the requiring legislation, to be reviewed by the Fire Marshal. The authority having jurisdiction will take into consideration the scope, finances and size of the structure. The approved fire sprinkler system must be installed within three years of the signing of the contract unless the time is extended for extenuating circumstances as determined by the Fire Marshal.
7. **Require that all licensed residential facilities install new or upgrade existing detection/alarm systems and meet existing code requirements.**
8. **Require the installation of smoke barriers to form at least two smoke compartments on each level of new and existing residential properties** having 50 or more occupants on each level of the structure.
9. **Require that all new and existing panic/fire exit door hardware be easily distinguishable with reflective markings** installed at the lowest level of each exit door in all common areas of buildings.
10. **Require that exit stairways in new residential occupancies be constructed 72 inches wide** so that a wheelchair and a fully equipped firefighter or emergency worker may pass in either direction, and that exterior exit egress be able to accommodate mobility impaired occupants.
11. **Require that all residential occupancies housing non-ambulatory individuals** that are 75 feet in height from fire department access or higher, **have at least 50 percent of their elevator assemblies constructed in a rated, “hardened” positive pressured manner** to provide safe egress in an emergency.

## ***Rationale***

According to the Home Fire Sprinkler Coalition, installing both smoke alarms and a fire sprinkler system reduces the risk of death in a home by fire by 82%, relative to having neither.

The National Fire Protection Association (NFPA) has no record of a fire killing more than two people in a completely sprinklered public assembly, educational, institutional or residential building where the system was working properly.

The current Montgomery County Fire Safety Code requires that “whenever a fire occurs in a building or there is reason to believe a fire exists in a building, the building shall be immediately evacuated and not reoccupied without permission of the fire official in charge.”

This is a proven premise to prevent fire fatalities. The premise, however, does not address a number of phenomena associated with senior citizens exiting buildings in an emergency. Namely, few individuals assign this requirement to one and two family homes where most senior citizens die from fire. Many senior citizens are non-ambulatory and while they are notified of a fire by smoke alarms they cannot effectively exit.

In one and two family homes seniors may traverse stairways via an electric stair chair elevator or with caregiver assistance. During a fire these resources may not be available and provide a single egress at best.

Multi-family residences generally provide a passenger elevator for senior citizen access to and from their living unit. During a fire the elevator is not available as it may quite likely provide a “chimney” for the fire from lower floors. The senior citizen must then rely on a high rise stairway and/or others to overcome their particular impairments for evacuation.

Early fire detection and suppression, and a “protect in place” arrangement with an approved evacuation plan, are ideal whether the senior citizen resides in a one and two family home or a high rise structure when rapid evacuation is not practical. The installation of approved smoke alarms and fire sprinkler systems (See Appendix A) provides inherent “protect in place” safety for senior citizens and accomplishes notification of a fire while it is in its incipient stage.

The County continues to experience the proliferation of existing multi-family communities comprised of primarily senior citizen populations. These communities were developed in the past without the anticipation that they would evolve into naturally occurring retirement communities (NORCs). This phenomenon presents the situation where senior citizens reside on the upper floors of multi-family residential buildings without modern smoke alarms, evacuation alarms, approved fire sprinkler systems and other inherent life and fire safety features. When a hostile fire occurs they cannot get out.

While the licensed residential care industry defines “independent living” (See Appendix B), many senior citizens do not acknowledge their physical and mental impairments as they relate to life and fire safety. Seniors generally assume they can safely live independently. The decision to “give up” independence and not live alone can be compared to the decision of when to stop

operating a motor vehicle. This phenomenon results in many senior citizens living alone and in ignorance or denial of the threat of fire.

### Recommendations Requiring Advocacy and Legislation

#### ***Introduction***

The following documentation identifies the recommendations promulgated by the Public and Service Provider Education, Community Characteristic and Demographic and Building and Technology sub task groups, above, requiring advocacy and legislation for implementation.

With a majority of recent senior citizen fire fatalities in Montgomery County involving the misuse of smoking materials, the Task Force was extremely pleased with the recent Maryland State legislation requiring the sale of “Fire Safe” cigarettes state-wide. The Governor’s signature was anticipated at this writing to implement this life saving legislation. The Task Force participated in the legislative process to achieve this significant accomplishment.

#### ***Immediate Implementation***

1. **Require that the County develop a program to assist in financing the implementation of the requirement to install approved fire sprinkler systems in existing residential facilities** owned by not-for-profit housing providers, public agencies, and in residential facilities where more than 20 percent of the units are income restricted or have rents controlled under a public program.
2. **Request that county officials work with public utilities to develop policies to enable utility companies to alert county public safety officials when utilities are to be shut-off** in the residence of a senior citizen.

#### ***Short Term Implementation***

3. **Increase funding for the MCFRS’s budget** to reflect the increased demand for fire and rescue services and urgent needs for public education and other related services due to the rapidly expanding senior citizen population.
4. **Require that the owner(s) of all buildings more than seventy five (75) feet in height, serving as housing for senior citizens, housing institutional or educational occupancies,** or such other buildings as may be required by the authority having jurisdiction, **designate to the Fire Chief, a qualified individual responsible for life and fire safety for that building(s)** to ensure compliance with applicable life and fire safety codes, standards and procedures.
5. **Require that all new assisted living facilities, group homes and licensed residential facilities install an approved fire sprinkler system.**



6. **Explore the feasibility of enabling persons with disabilities to voluntarily register with the Montgomery County 911 system** so that in the event of an emergency pertinent mobility impairment information is transmitted to first arriving emergency personnel.

### ***Long Term Implementation***

7. **Require that all existing residential buildings with three or more living units, regardless of ownership, shall have an approved fire sprinkler system installed** throughout within five years of the effective date of the requiring legislation.
8. **Require that all licensed residential facilities will have a contract with a licensed installer to install an approved fire sprinkler system within one year of their license renewal date,** after the passage of the requiring legislation, to be reviewed by the Fire Marshal. The authority having jurisdiction will take into consideration the scope, finances and size of the structure. The approved fire sprinkler system must be installed within three years of the signing of the contract unless the time is extended for extenuating circumstances as determined by the Fire Marshal.
9. **Require that all licensed residential facilities install new, or upgrade existing detection/alarm systems** and meet existing code requirements.
10. **Require the installation of smoke barriers to form at least two smoke compartments on each level of new and existing residential properties** having 50 or more occupants on each level of the structure.
11. **Require that all new and existing panic/fire exit door hardware be easily distinguishable with reflective markings** installed at the lowest level of each exit door in all common areas of buildings.
12. **Require that exit stairways in new residential occupancies be constructed 72 inches wide** so that a wheelchair and a fully equipped firefighter or emergency worker may pass in either direction and that exterior exit egress be able to accommodate mobility impaired occupants.
13. **Require that all residential occupancies housing non-ambulatory individuals** that are 75 feet in height from fire department access or higher, **have at least 50 percent of their elevator assemblies constructed in a rated, "hardened" positive pressured manner** to provide safe egress in an emergency.

### ***Rationale***

Many of the recommendations promulgated by the Task Force may be implemented at the County staff level after County Executive direction. Other recommendations will require Executive Order, Regulation or County Council legislative due process.

### ***Projected Future Direction***

As prescribed by Executive Order 103-06, the Senior Citizen Fire Safety Task Force is expected to complete its initial work by May of 2008. An annual report is due in May of 2007 with the final report due at completion of the task force's two year term.

Expert technical presentations and topic focused task group work sessions are scheduled for the remainder of the two-year term. Priority will be given to refinement of methods for prevention of senior fire fatalities in single-family residences and those seniors "aging in place" who are living independently. The schedule includes topics related to senior citizen functional deficits such as dementia and mental health impairments, marketing and public attitude modification techniques, implications of the statewide "fire-safe" cigarette legislation, the effectiveness of detection and suppression systems from the senior citizen residential perspective, and revisions to, and addition of, applicable fire codes and standards. During the second year, the task groups with outside fiscal expertise will determine the resource allocations necessary for implementation of the complete recommendation set.

The Senior Citizen Fire Safety Task Force, through the sub group organization, will continue to pursue the task force mission and responsibilities for the term of the Executive Order to reduce and/or eliminate the hazards, behaviors and/or causes associated with senior citizen fire casualties and fatalities.

The Building Technology and Standards topic sub group will continue to identify changes to building and fire codes, standards and regulations for new and existing structures that anticipate/acknowledge the aging population. They will explore the addition of a new "independent living" use group within national and/or local building and fire model codes, regulations and standards. The topic sub group will review and investigate existing technology and determine suggested recommendations for future technology to address senior fire safety needs.

The Community Characteristics and Demographic topic group will continue to identify information sources and study demographic data sources to bring new analysis to the other topic groups for their consideration in formulating recommendations and supporting rationales. The work of the community characteristics and demographics topic group was essential to the efforts of the task force in the identification of characteristics, demographics, and high-risk senior in Montgomery County and serves as the driving force for many Task Force recommendations. The unique composition of the topic group provided broad expertise in community features and population trends.

The Public Education Task Group believes that a multifaceted educational program must be developed and implemented to increase such basic fire safety knowledge among Montgomery County's Senior Citizens. The public education program must undertake the following efforts:

- 1) Identify the varying audiences for the fire safety message, taking into account the residential and social preferences and needs of seniors: Seniors living independently

alone; seniors in assisted and congregate housing situations; families and care providers of seniors, with special outreach to ethnic and minority communities.

- 2) Explore the many means of communicating the message to seniors, including oral, print, electronic, and web-based media.
- 3) Quantify and identify the resources that will be required to communicate the message.

The Public Education Task Group recognizes that the message itself must be developed by experts in the Fire and Rescue Service, and by others in the fields of fire safety and gerontology. In support of this effort, the Task Group is preparing comprehensive recommendations on the various audiences for the message and the means of disseminating this vital information in an effective, efficient and timely manner.

The Advocacy and Legislation topic sub group will review all task group recommendations to determine appropriate and timely legislative action and advocacy initiatives.

Designated task group discussion leaders and other select task force members will comprise the Resource Allocation task sub group to determine resources and funding needed to implement the 30 approved formal recommendations.

## ***Conclusion***

The Task Force will continue to study Montgomery County's senior citizen fire casualty and fatality phenomenon through the five topic sub group assignments. The result of these deliberations will be incorporated as formal recommendations in the final report in an effort to reduce senior citizen fire casualties and fatalities. The task force will continue to monitor senior citizen fire casualty and fatality trends for the remaining task force term and provide guidance and advice to the County Executive and the Fire Chief as evidence indicates

## ***Bibliography and Information Sources***

2000 Census, United States Census Bureau

FA-300 January 2006, "Fire and the Older Adult."

Florida Fire Marshals and Fire Inspectors Association

Home Fire Sprinkler Coalition

Montgomery County Fire Rescue NFIRS Data (1996-2006 to date)

Montgomery County Code, Chapter 22; "Fire Safety Code," 1997.

Montgomery County specific data gathered by the Center for Substance Abuse Research (CESAR), <http://www.cesar.umd.edu/>.

National Fire Protection Association, Quincy, MA, July 2005

National Fire Protection Association National Fire Sprinkler Association

National Institute on Alcohol Abuse and Alcoholism and CSAT. 2002

Smith, Charles, PhD Montgomery County Health and County Services Data Analyst, 2006

U.S. Department of Homeland Security, U. S. Fire Administration/National Fire Data Center, 2006

USA Today (Newspaper) Money Section 10/3/06

Windsor Fire Protection District August, 2000

## ***Appendix A. Fire Sprinkler Data***

### **Retro-Fire Sprinkler System Installation – Overview, Costs, Incentives**

#### ***Fire Sprinkler System Overview***

In an occupancy with an approved fire sprinkler system, a network of piping filled with water under pressure is installed behind the walls and ceilings. Individual sprinkler heads are placed along the piping to protect the areas beneath them. Because the water is always in the piping, the fire sprinkler system is always “on call.” If fire breaks out, the air temperature above the fire rises and the sprinkler activates when the air temperature gets high enough. The sprinkler sprays water forcefully over the flames, extinguishing them completely in most cases, or at least controlling the heat and limiting the development of toxic gases until the fire department arrives. Only sprinkler(s) nearest the fire actuate. Smoke will not actuate fire sprinklers.

Contrary to popular opinion, the greatest risk from fire is in our residence not in public buildings, offices, hospitals and commercial structures. This is due to the fire and life safety protection that is usually installed in these properties. The same technologies are available for our residences where 80 percent of all fire fatalities occur.

Approved fire sprinklers typically reduce the chances of dying in a residential fire by one half to two thirds. Together with smoke alarms, sprinklers reduce the risk of dying in a residential fire by 82 percent.

Fire sprinklers are highly reliable. When present in the fire area, they have operated in all but seven percent of fires large enough to activate the system. Human error was a factor in almost all of the failures with the system being shut off in almost 75 percent of the failures.

Senior citizens, age 65 and older, begin to experience multiple physical and/or mental impairments. Many seniors are not ambulatory and live alone. Having an approved, operating fire sprinkler system protects these seniors place in the event of a fire.

#### ***Cost Estimates for Retro-Installation of Fire Sprinkler Systems***

Studies have proven that the cost of retroactively installing fire sprinkler systems has actually decreased of the past ten years. The cost of these installations depends, to a large degree, on the following five factors:

1. The size of the building
2. The construction limitations and restraints
3. The available water supply
4. The piping material being used
5. The layout/design of the fire sprinkler system

In most instances, however, the cost of retro sprinklers parallels the cost of floor covering in a residential property. Current advertisements for carpet revealed the following cost estimates:

- “StainMaster Carpeting” \$2.22 per square foot installed.
- “Karastan Carpeting” \$3.33 per square foot installed.

If the building is average the carpet cost will be \$2.22 per square foot; an upscale building will have the \$3.33 per square foot cost. This principle applies to retro fire sprinkler installation in “average” or “upscale” buildings. The fire sprinkler installation will reflect the upgrade of the building’s surroundings and finishes.

The following retro fire sprinkler installation cost estimates were provided by the National Fire Sprinkler Association (NFSA):

Examples of Fire Sprinkler Retro Installation Costs Including Associated Repairs & Patches	
Occupancy	Example Costs Per Square Foot
Multi-Family [low rise]	\$4.00
Multi-Family [high rise]	4.10
Nursing Home	7.00
Hospital	7.30
Office Building	4.10
School	4.50
Church	5.20
Hotel/Motel	6.30
Restaurant	7.00

Florida Fire Marshals and Fire Inspectors Association, based on a recent project in Dolphin Cove Condominiums in Florida, determined these retro fire sprinkler installation costs as follows:

Senior high-rise condominium building  
Masonry non-combustible construction  
Detection/Alarm system upgrade  
Asbestos abatement  
\$2.00-\$3.00 per square foot  
1,200 sq. ft. = \$2,400-\$3,600 per unit cost.

### ***Financial Incentives for the retroactive installation of approved fire sprinkler systems***

There are at least seven ways the retroactive installation of fire sprinkler systems may put money back in the pocket of a building or dwelling owner; Insurance Savings, Income Tax Deductions, Property Tax Deductions, Life Safety Code Compliance, Federal Legislation, Liability Avoidance, and No Business Interruption.

## Insurance Savings

The following list of prominent insurance providers outlines the insurance premium savings for fire sprinkler systems in buildings:

State Farm <a href="http://www.statefarm.com">www.statefarm.com</a>	5%-10% off premium
Chubb <a href="http://www.chubb.com">www.chubb.com</a>	10% "credit"
Liberty Mutual <a href="http://www.libertymutual.com">www.libertymutual.com</a>	8%-16% average off total premium
Fireman's Fund <a href="http://www.firemansfund.com">www.firemansfund.com</a>	30% off base price of premium when central alarm included. 5%-8% if bathrooms, attics and closets not protected.
Met Life <a href="http://www.metlife.com">www.metlife.com</a>	5%-15% applied to entire owner occupied policy
The Hartford <a href="http://www.thehartford.com">www.thehartford.com</a>	8%-13% depending on protection

Example of insurance savings offsetting retroactive installation of fire sprinklers in Dolphin Cove Condominium in Florida. The high rise building is of masonry non-combustible construction for senior citizens. The project involved rehabilitation from a triple fatality fire and asbestos abatement.

Considering the financial impact of the fixed income senior citizens a compliance deadline of 12 years was determined. Saving \$25.00 per month through an insurance discount for the installation of a fire sprinkler system resulted in a \$3,600 savings over 12 years, not counting interest.

Insurance Services Office Residential High Rise Insurance Rates Per \$100			
Insured			
Construction	Not Sprinklered	Sprinklered	Difference
<i>Masonry Non-Combustible</i>			
Building	\$0.46	\$0.22	\$0.24
Contents	\$0.60	\$0.31	\$0.29
Source: Florida Fire Marshals and Inspectors Association			

If the value of this 1,200 sq.ft. masonry non-combustible condominium is \$100,000 (less than \$85.00 per square foot replacement cost) and the contents are valued at \$40,000, that portion of the property insurance *loss cost* is determined at \$0.46 for the building and \$0.60 for the contents per \$100 insured. If the building is not protected throughout with a fire sprinkler system, the *loss cost* for the building is \$460.00 and for the contents \$240.00, or \$700.00 per year. This figure is the expected break even point and the insurance provider adds overhead, administrative and



profit to these numbers. The typical insurance company practice is to double the *loss cost* numbers.

By adding an approved fire sprinkler system the insurance costs for this condominium unit will be \$220.00 for the building and \$124.00 for the contents of a total of \$344.00. The *loss cost* annual savings as projected by the Insurance Services Office is  $\$700 - \$344 = \$356$  or \$30.00 per month reduced insurance cost.

The actual retro installation cost example for the Dolphin Cove Condominium for a fire sprinkler system, a complete fire detection/alarm system, repair of structural damage and asbestos abatement resulted in a cost of \$3.44 per square foot or approximately \$3,500 per unit. After a twelve year financing arrangement each unit was assessed \$50.00 per month. After deducting the average \$30.00 per unit insurance savings from the \$50.00 per unit installation assessment the net cost per unit was \$20.00 per month.

### Income Tax Deductions

Three types of income tax deductions are allowed for installing fire sprinkler systems.

1. A depreciation allowance for the value of the system
2. The interest on the loan
3. Qualified Rehabilitation Tax Credit

The recently submitted Fire Sprinkler Incentive Act of 2007 will amend the 1986 Internal Revenue Code to accelerate the present depreciation schedule for the retrofit of fire sprinklers to five years at 20 percent per year. The current depreciation schedule is now 27.5 years for residential properties. This accelerated depreciation schedule, coupled with insurance reductions, can allow building owners, who retrofit their property with fire sprinklers, to recover the cost over a much shorter time. Although depreciation deductions involve no outflow of cash, they are fully deductible in arriving at taxable income.

The Qualified Rehabilitation Tax Credit applies to buildings built before 1936. Residential properties must be designated historic structures. When the building undergoes a major renovation the owner receives a twenty percent tax credit the first year the building is back in service.

### Property Tax Deductions

Montgomery County residents are eligible for a one-time tax credit of up to 50 percent of the county property tax on dwellings. This tax credit is for the installation of a fire sprinkler system on any detached single family or attached dwelling unit or units in multi-family buildings.

Owners must apply for the tax credit in the year in which the sprinkler system is installed, show that the sprinkler system complies with applicable codes and standards and provide the actual cost of installation in the dwelling unit for which the tax credit is to be applied.

### Life Safety Code Compliance

The NFPA, Life Safety Code 101 requires all high rise apartments, hotels and office buildings to be fully sprinklered or have an engineered life safety system. An engineered safety system is a combination of standpipes, detectors, smoke control, exits, compartmentation, and partial sprinkler protection. While this may be perceived as less expensive, fire sprinklers eventually pay for themselves, engineered safety systems do not.

### Federal Legislation

The Americans with Disabilities Act, among its many complex requirements, requires an “area of refuge” for disabled people to go to in case of fire. There must be such an area on every floor of every new and existing building large enough to hold two wheelchairs and separated from the rest of the floor by a two-hour assembly. This area must also be adjacent to an exit and/or stairwell. This area of refuge does not have to be installed in a fully sprinklered building. When sprinklered the whole building is an area of refuge

### Liability Avoidance

Recent court decisions involving large life loss fires have determined that even though codes did not require fire sprinkler systems when the building was built, widespread use of these systems along with requirements for new buildings to have them has led to the public expecting fire sprinklers as a “reasonable level of care.” These court decisions have required building owners to pay out more than \$1,000,000 per life lost in fire; millions of dollars which would never have been paid out had a fire sprinkler system been installed.

### Interruption/Displacement Prevention

No one plans on losing parts or all of a building to fire. Fire in an unsprinklered building will shut down major portions, if not the whole building. Loss in revenue to the owner occupant takes many forms depending upon the occupancy type not to mention casualty and life loss. Owners not longer get rents or payments, health care facilities can no longer serve their constituents.

Senior citizen displacement in the event of a fire in their residence, whether a family home, any form of independent living, assisted living or a nursing home can be prevented with the installation of approved fire sprinkler systems. With affordable housing at a premium, loss of “senior properties” and “naturally occurring retirement complexes” further exacerbates senior housing challenges for the individual and their family.

Fire sprinklers limit a fire and fire damage to a small area. After a fire, structures can quickly be reoccupied with the loss of revenue minimized.

### ***Asbestos Abatement Considerations***

The consideration to retroactively install fire sprinkler system raised the consideration of asbestos abatement. Asbestos was a primary type of “fireproofing” material used to protect structural steel during the 1960s and early 1970s. It is no longer in use due to the discovery that asbestos fibers, when inhaled, can cause lung cancer.

Building owners have two basic asbestos abatement options to be in compliance with federal regulations:

1. Properly remove and dispose of the asbestos
2. Seal up the areas where asbestos is present to keep people from coming in contact with it.

At a minimum, building owners with asbestos in their buildings have three options when retroactively installing fire sprinkler systems. From least to most expensive, they are:

1. Use sidewall sprinkler heads, soffits and wall cavities where there is no asbestos, to install the system.
2. Use the procedure developed by the GSA to only remove the small piece of asbestos where the hanger for the sprinkler system needs to go. The size of the asbestos that needs to be removed is about the size of a half-dollar.
3. Remove all of the asbestos.

## ***Appendix B. Senior Housing and Care Facility Definitions***

### **Independent Living Facilities**

Among the many senior housing options available, independent living provides the greatest versatility and freedom. Independent living for seniors refers to residence in a compact, easy-to-maintain, private apartment or house within a community of seniors. Any housing arrangement designed exclusively for seniors may be classified as an independent living community.

Montgomery County continues to experience a naturally occurring retirement community (NORC) phenomenon where senior citizens aging in place evolve into a community where the majority of the residents are age 65 or older.

### **Congregate Housing Facilities**

These facilities are offered in senior citizen apartment buildings which serve low and moderate income residents and may be operated by local housing authorities, non-profit organizations, or housing management companies. Eligible residents are those who are at least 62 years of age and in need of assistance in one or more activities of daily living. They may still wish to live in a private senior apartment but welcome being free of the responsibilities of grocery shopping, meal preparation and housework. They are capable of getting to the communal dining area independently. As the average age of residents in retirement homes or congregate housing has increased, these facilities have evolved to offer more and more services to the frail and needy seniors preventing the need to go to a nursing home.

### **Assisted Living Facilities**

A residential facility based program that provides housing and supportive services, supervision, personalized assistance, health-related services, or a combination of these services to meet the needs of residents who are unable to perform, or who need assistance in performing the activities of daily living or instrumental activities of daily living, in a way that promotes dignity and independence for the residents.

### **Nursing Home Facilities (Skilled Nursing Facility)**

The facilities have registered nurses who help provide 24 hour care to people who can no longer care for themselves due to physical, emotional, or mental conditions. A licensed physician supervises each patient's care and a nurse or other medical care professional is almost always on the premises. Most nursing homes have two basic types of services: skilled medical care and custodial care.

### **Group Home**

A residence that houses three to 16 unrelated persons receiving group residential care, but not more than the number of persons allowed under a license issued by a state agency.

Group residential care means the provision of shelter, board, facilities, and resources for daily living, personal guidance, direction and supportive care and services in a residential environment. Supportive care includes up to 24 hour supervision, three meals per day, housekeeping services, medication supervision and assistance with personal care or activities of daily living.

### ***Appendix C. Benchmarking Comparison Tables***

The following tables reflect senior citizen fire fatality and fire casualty (injury) data collected by the National Fire Incident Reporting System (NFRIS) from Montgomery County, MD, Fairfax County, VA, Baltimore County, MD and Jefferson County, KY. These jurisdictions were selected for data comparison based on similar demographic, financial and population characteristics.

All tables compare senior citizens age 65 and older for the period of calendar years 1997 through 2006.

Table 1 – Fire Fatalities and Fire Casualties

Table 2 – Fire Fatalities by Montgomery County Response Districts

Table 3 – Fire Fatalities by Gender

Table 4 – Fire Casualties by Gender

Table 5 – Fire Fatalities by Age

Table 6 – Fire Casualties by Age

Table 7 – Fire Fatalities by Day of Week

Table 8 – Fire Casualties by Day of Week

Table 9 – Fire Fatalities by Month

Table 10 – Fire Casualties by Month

Table 11 – Fire Fatalities by Hour of Day

Table 12 – Fire Casualties by Hour of Day

Table 13 – Fire Fatalities by Property Type

Table 14 – Fire Casualties by Property Type

Table 15 – Fire Fatalities by Area of Origin

Table 16 – Fire Casualties by Area of Origin

Tables were designed by Lieutenant Michael Adams, MCFRS

Table 1

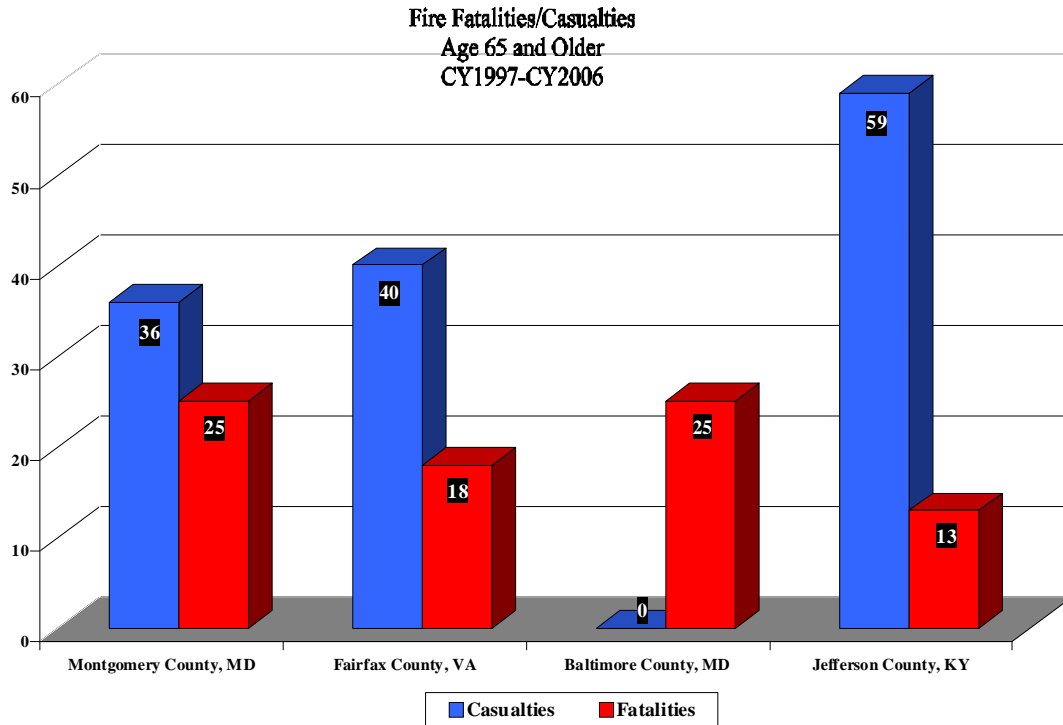


Table 2

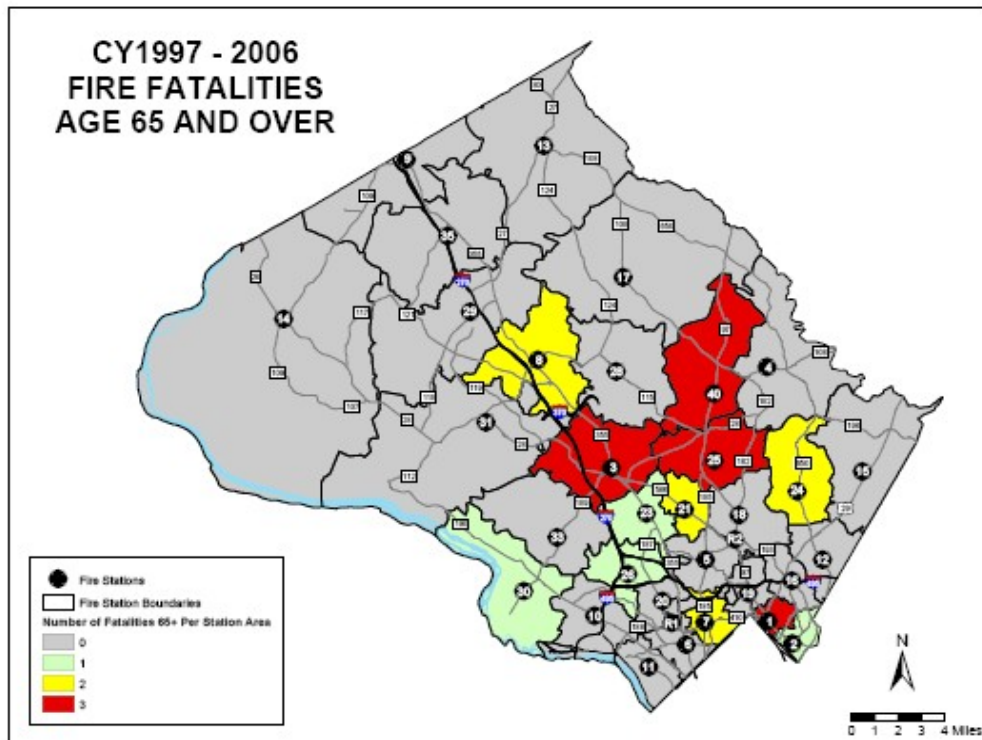


Table 3

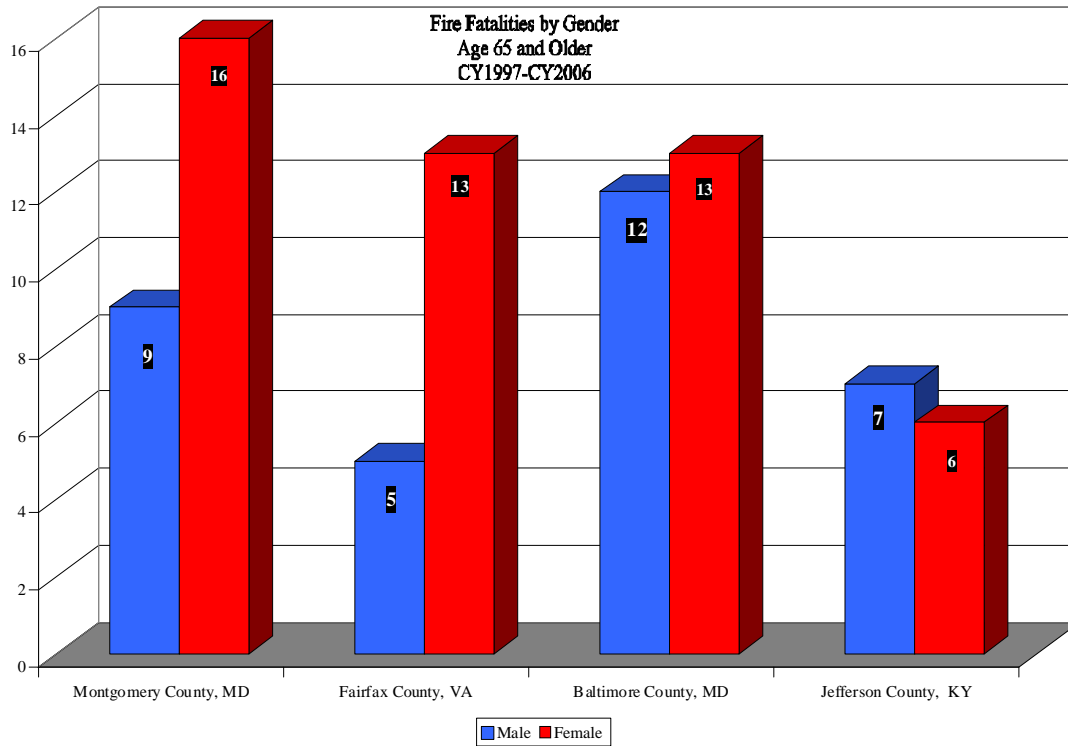
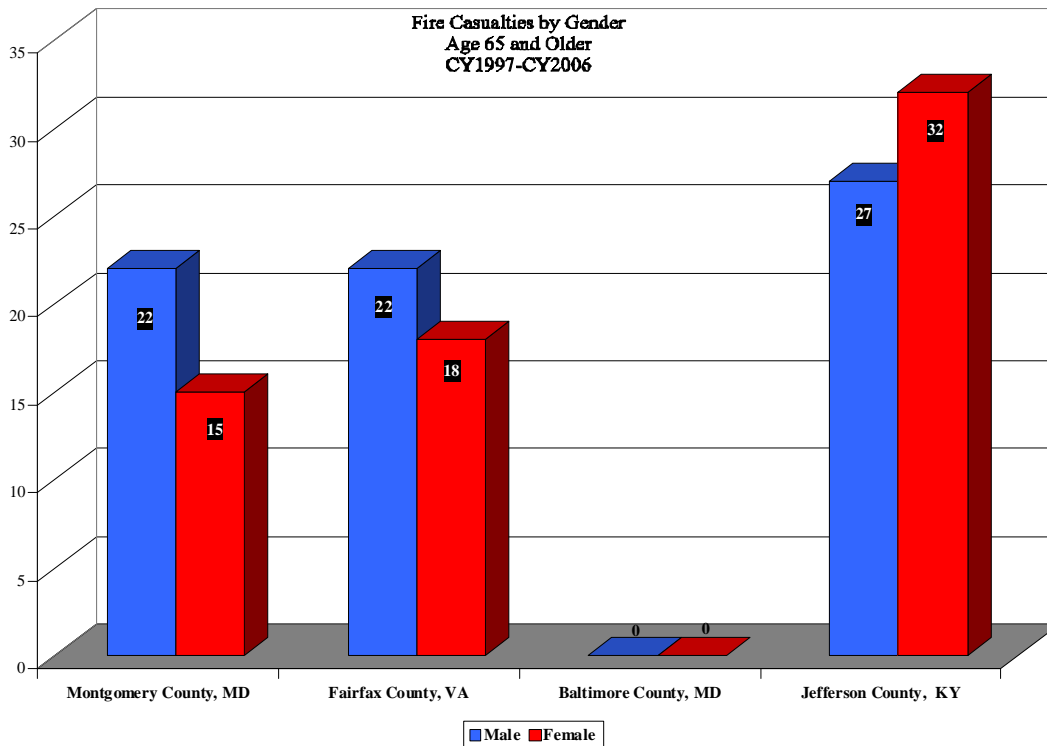
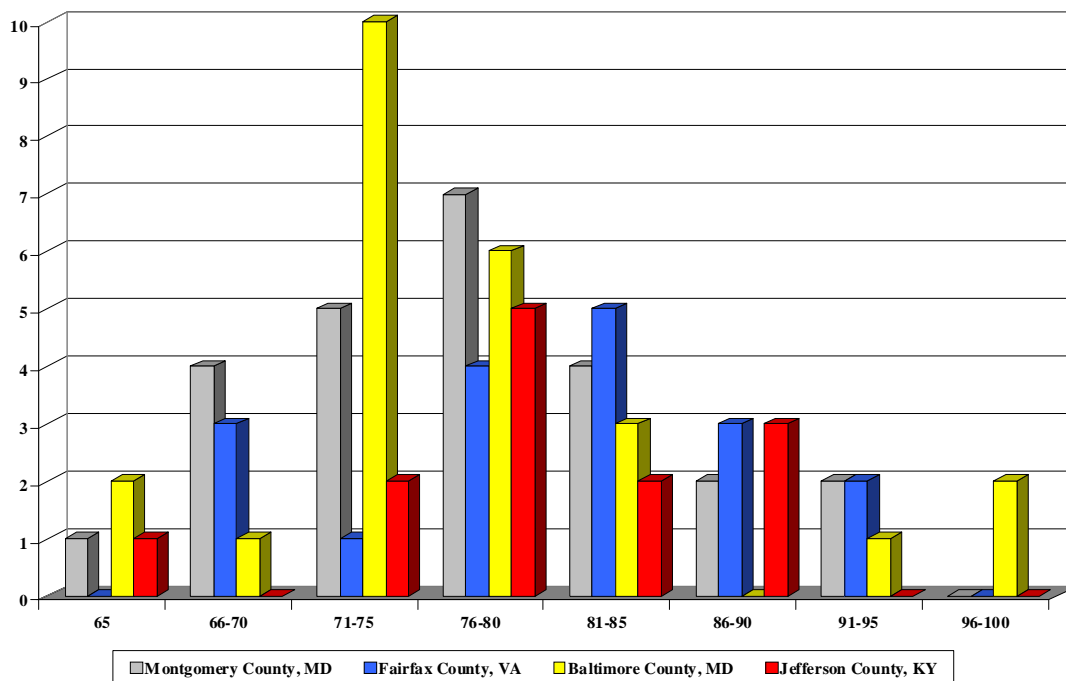


Table 4



**Table 5**  
**Fire Fatalities by Age**  
**Age 65 and Older**  
**CY1997-CY2006**



**Table 6**

**Fire Casualties by Age**  
**Age 65 and Older**  
**CY1997-CY2006**

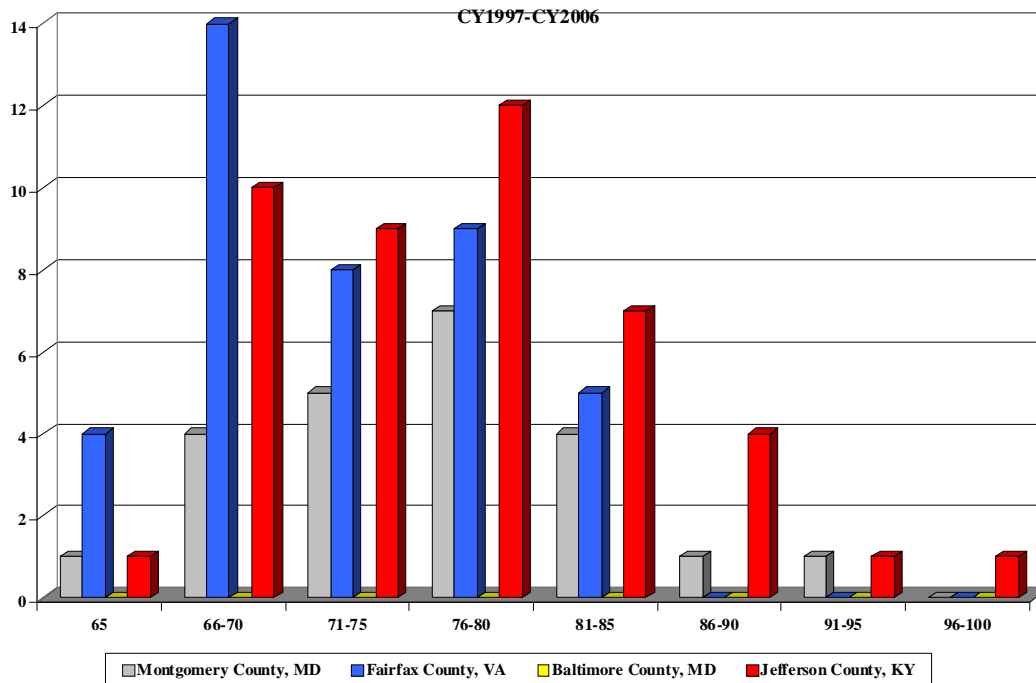




Table 7

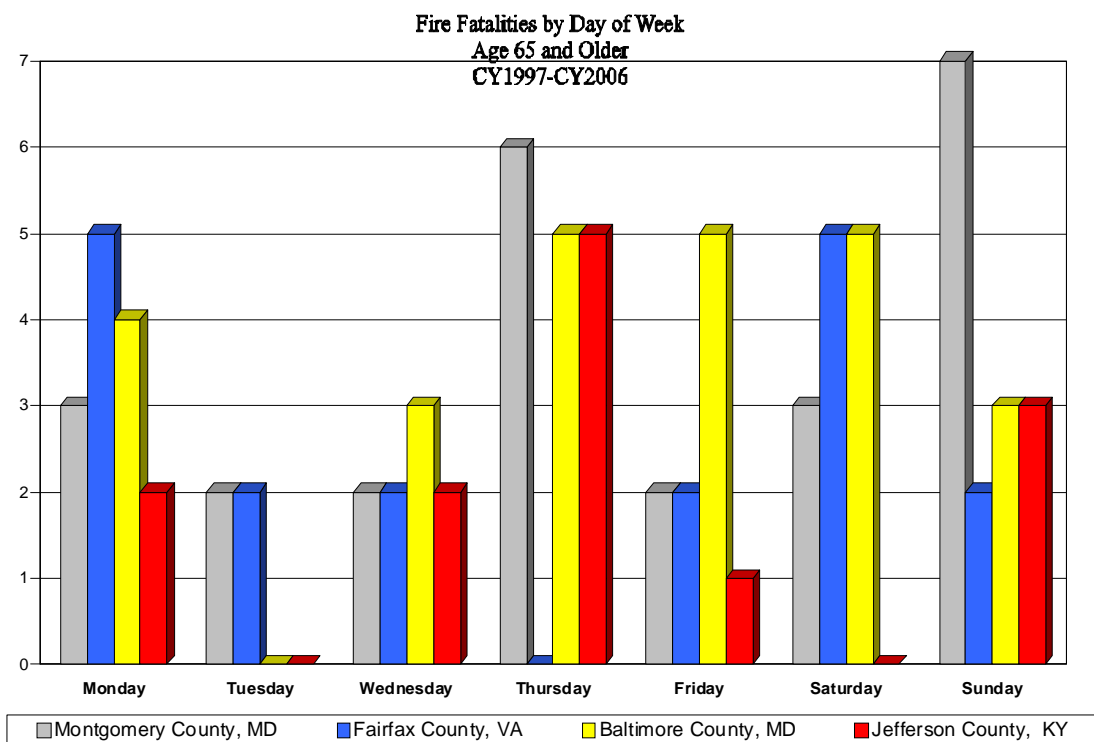
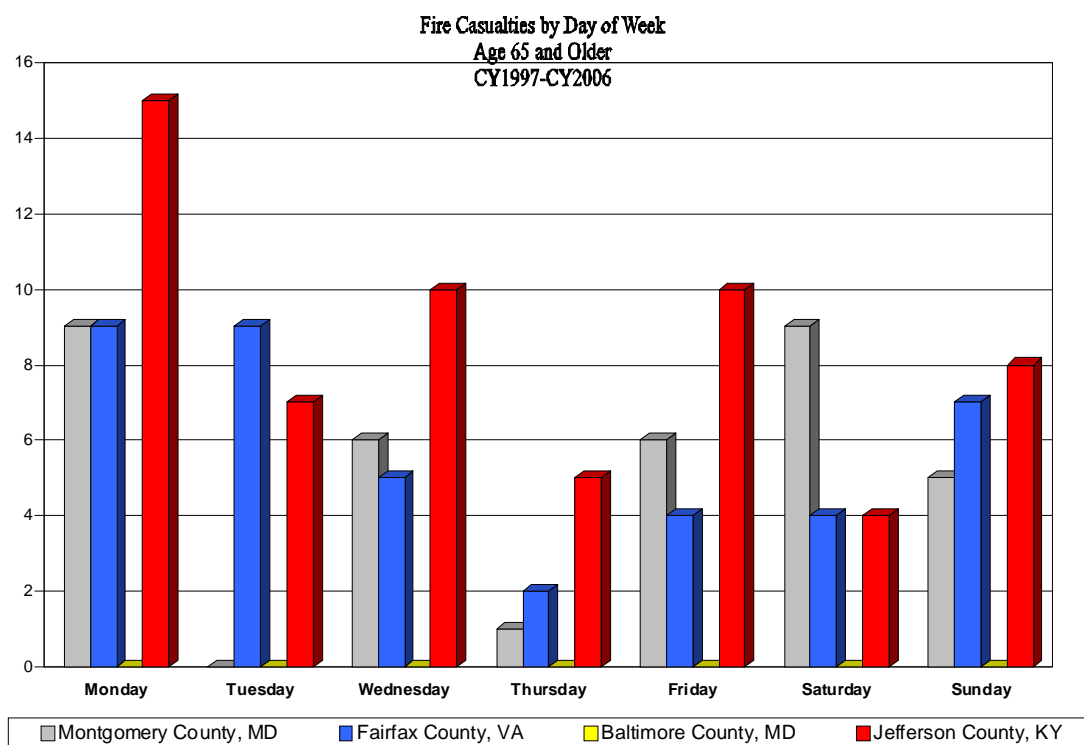
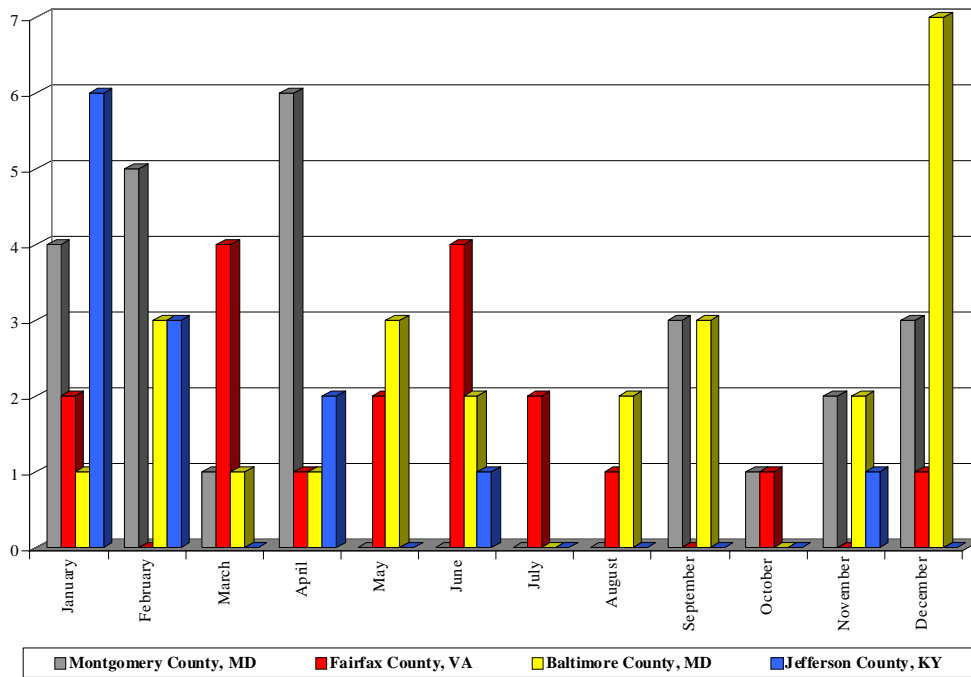


Table 8



**Table 9**  
**Fire Fatalities by Month**  
**Age 65 and Older**  
**CY1997-CY2006**



**Table 10**  
**Fire Casualties by Month**  
**Age 65 and Older**  
**CY1997-CY2006**

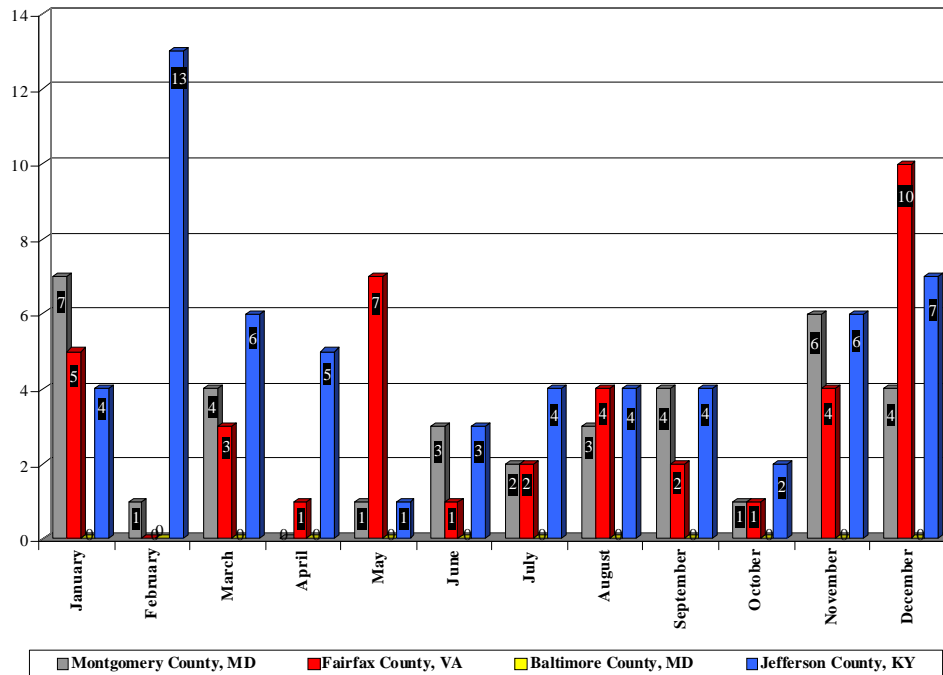


Table 11

Fire Fatalities by Hour of Day  
Age 65 and Older  
CY1997-CY2006

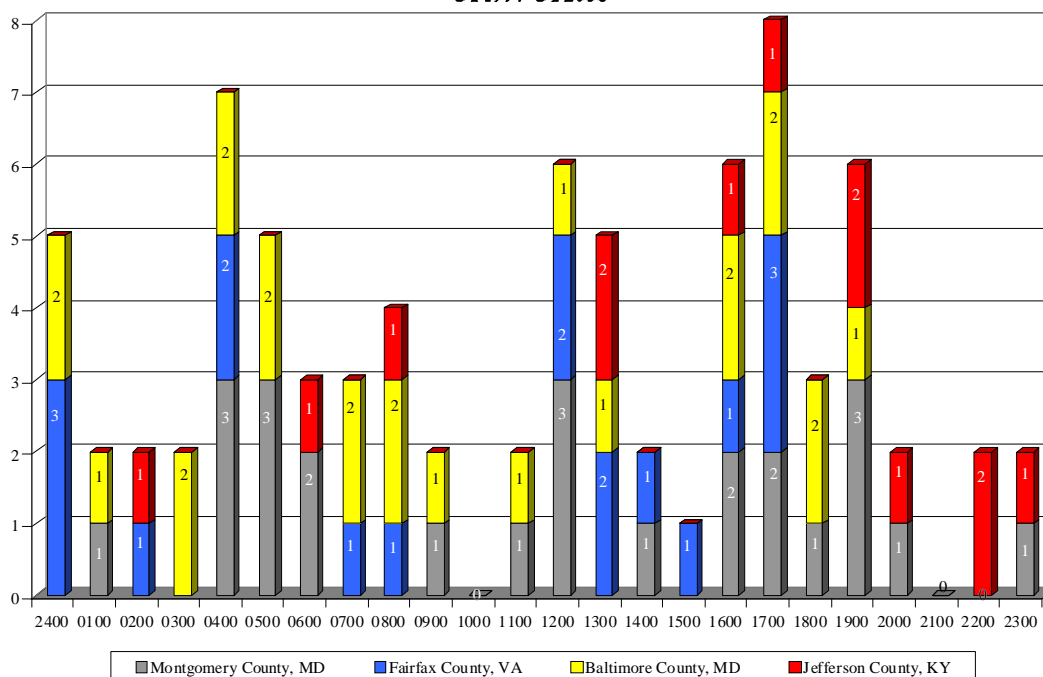


Table 12

Fire Casualties by Hour of Day  
Age 65 and Older  
CY1997-CY2006

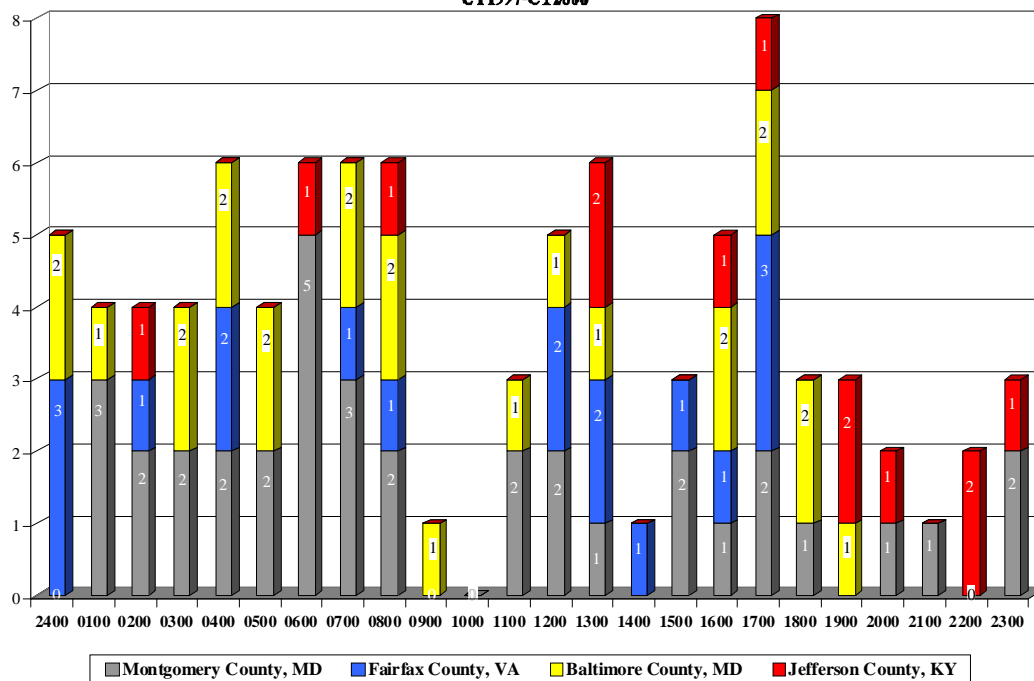


Table 13

**Fire Fatalities by Property Type  
Age 65 and Older  
CY1997-CY2006**

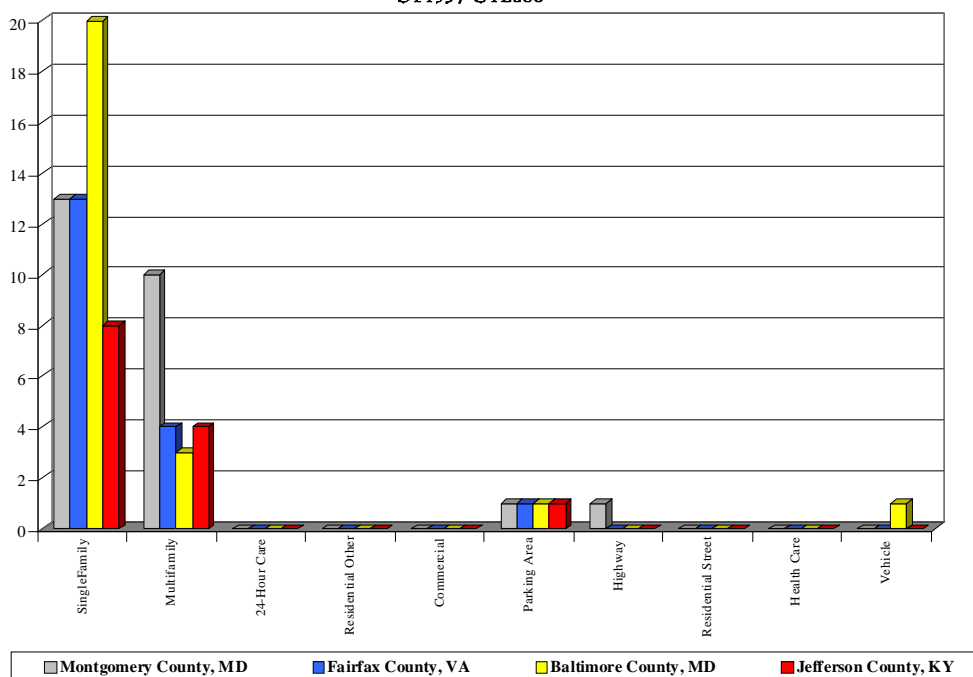


Table 14

**Fire Casualties by Property Type  
Age 65 and Older  
CY1997-CY2006**

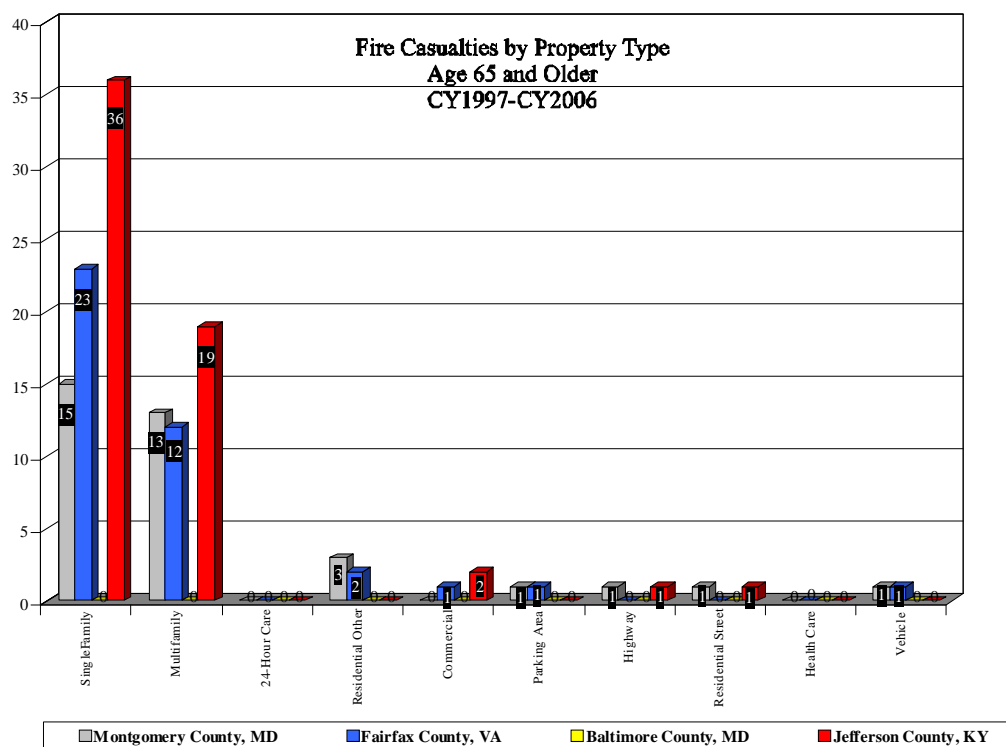


Table 15

Fire Fatalities by Area of Origin  
Age 65 and Older  
CY1997-CY2006

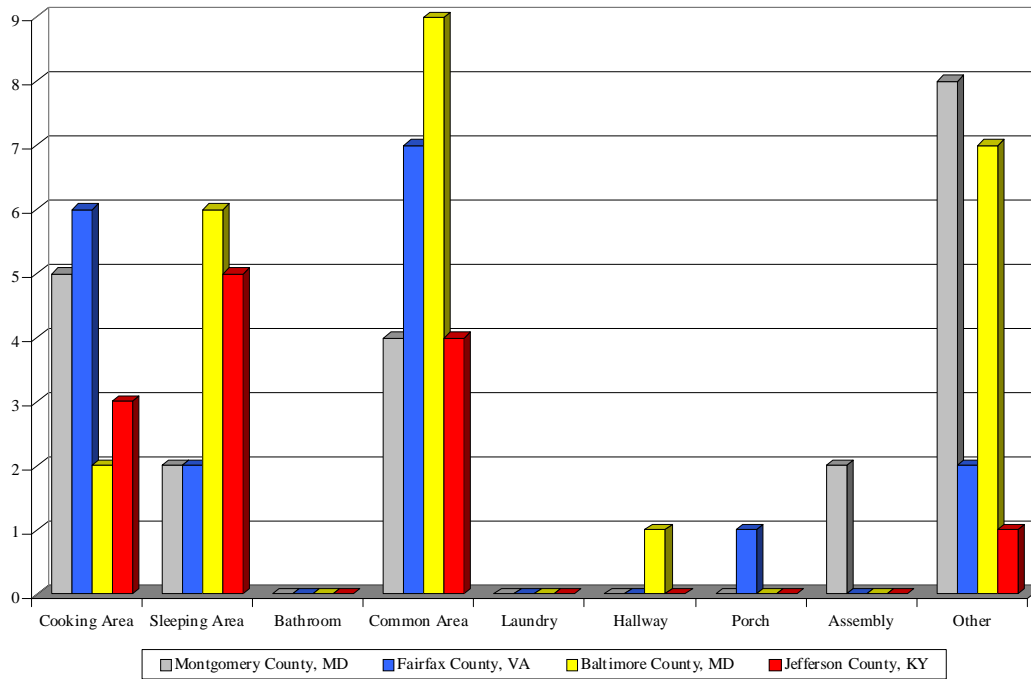


Table 16

Fire Casualties by Area of Origin  
Age 65 and Older  
CY1997-CY2006

